III. Agency Letters and Responses

This section presents letters written by public agencies, and the Board's responses to the letters.

Comments on the 2005 DEIR

A-1

California Regional Water Quality Control Board
North Coast Region
Dennis Leonardi, Chairman

Alan C. Lloyd, Ph.D.
Agency Secretary

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Arnold Schwarzenegger
Governor

February 9, 2006

RECEIVED BY
FEB 14 2006
BOARD OF FORESTRY AND FIRE PROTECTION

Mr. George D. Gentry
Executive Officer
Board of Forestry and Fire Protection
Post Office Box 944246
Sacramento, California 94244-2460

Subject: Comments on the Draft Environmental Impact Report for the Draft Jackson Demonstration State Forest Management Plan, SCH# 2004022025

File: Timber, General

Dear Mr. Gentry:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Report (DEIR) for the Jackson Demonstration State Forest (JDSF) Management Plan (DFMP).

My staff met and I with Russ Henly, Mark Jameson, Pete Cafferata, and Chris Keithley of your staff during our review to gain perspective on the overall project and to communicate with your staff regarding our comments and concerns at that point. Subsequently, my staff has reviewed the pertinent portions of the DEIR and offer both general and specific comments, enclosed with this letter.

If you or your staff have any questions regarding our comments or need more information, please contact David Fowler of my staff at 707-576-2756 or his supervisor, Christine Wright-Shacklett at 707-576-2686. For questions regarding the TMDL Action Plans for the Big and Noyo River watersheds, please contact Lauren Clyde at 707-576-2674.

Sincerely,

Robert Klamt
Chief, Timber Harvest Division

Enclosures: Memo from David Fowler, Staff review of the Jackson Demonstration State Forest Draft EIR and Draft Management Plan

Water Quality Control Plan for the North Coast (Basin Plan)
Chapter 2. Beneficial Uses

JDSFDEIR_Comments-feb06RK.doc

California Regional Water Quality Control Board
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Arnold Schwarzenegger
Governor

February 9, 2006

To: Robert Klamt
Chief, Timber Harvest Division

From: David Fowler
Representing review staff

Subject: Staff review of the Jackson Demonstration State Forest Draft EIR and Draft Management Plan

General Comments

The DEIR contains many commendable goals and objectives consistent with the Jackson Demonstration State Forest primary purposes. In general, Regional Water Board staff recommend that the goals and objectives listed throughout the DEIR also recognize the need to protect all beneficial uses of water and comply with water quality objectives in accordance with the Water Quality Control Plan for the North Coast Region, also known as the Basin Plan. For example, the objectives under Goal #3, Watershed and Ecological Processes, should be expanded to include protection of the beneficial uses of water designated in the Basin Plan. The beneficial uses of water of the Noyo and Big Rivers identified in the Basin Plan are shown on Table 2-1 of the Basin Plan (Attachment).

As mentioned in the DEIR, the Big River and Noyo River are both listed under Section 303(d) of the federal Clean Water Act as impaired due to excessive sediment. Big River is also listed as impaired due to elevated temperatures. The U.S. Environmental Protection Agency (USEPA) has established Total Maximum Daily Loads (TMDLs) for sediment in both the Big River watershed and the Noyo River watershed.

The JDSF DEIR should lead to compliance with TMDLs for Noyo and Big Rivers. TMDL implementation should be clearly incorporated into the Management plan for JDSF. A suite of instream and upslope watershed targets are included, because no single water quality target adequately describes water quality related to sediment. When considered together, the targets are expected to provide an accurate indication of the condition of the stream, including evidence of attainment of water quality objectives, and protection of beneficial uses. Appropriate monitoring and analysis may lead to the future refinement of these targets.

Many of the water quality targets also serve as numeric surrogates for the mostly narrative sediment-related Water Quality Objectives contained in Chapter 3 of the Basin Plan. Sediment-related water quality objectives include suspended material, settleable material, sediment, and

turbidity. The parameters listed as targets are likely to respond more rapidly than water quality objectives to changes in water quality from management activities, and trends will be more easily discerned. The exception is turbidity, which is a sensitive measure of the effects of land use on streams.

The general policy of the North Coast Regional Water Quality Control Board is to reduce sediment input levels to the those suggested by the TMDL, which in the case of the Noyo River is a decrease of 27 percent to an average sediment delivery rate equivalent to not more than an average of 475 tons per square mile per year.

Due to limited salmonid population data and the heavy disturbance in the watershed prior to the collection of sediment yield data, a time period reflective of reference conditions is not available for JDSF. Therefore, the sediment reduction is only a conservative starting point to stimulate positive changes and response in the channel.

It is important that the DEIR recognize the following previously adopted water quality programs and policies that apply in the north coast region and to the water bodies in the JDSF. In 2004, the Regional Water Board adopted the state and federal Anti Degradation Policies into the Water Quality Control Plan to ensure the retention of high quality waters that are not currently listed as impaired. Also in 2004, the Regional Water Board adopted the Resolution R1-2004-0087, Total Maximum Daily Load Implementation Policy Statement for Sediment Impaired Receiving Waters in the North Coast Region. In 2005, the State Water Resources Control Board adopted a new Nonpoint Source Policy that applies to all new projects that may have result in pollutant discharges to waters of the state.

Currently, the Regional Water Board is developing a new region-wide Sediment Amendment as well as a Stream and Wetland Protection Policy for consideration of adoption into the Water Quality Control Plan (Basin Plan). These additions to the Basin Plan are being designed to address sediment and temperature pollutants affecting water quality.

Specific Comments

The following relate to specific sections of the DEIR. Each comment is referenced to the corresponding DEIR section and page number.

Re: Section III.2, Goals and Objectives, Goal #3 (p. III-4)
The objectives in this section should include the protection of the beneficial uses of water, and where water quality is limited, strive to meet water quality standards while achieving other goals and objectives of the JDSF.

Re: Section III.2, Goals and Objectives, Goal #6 (p. III-6)
The objectives specified in this section should be expanded to recognize the need to update the DFMP so that it complies with the Anti Degradation Policy, the TMDL Implementation Policy Statement for Sediment Impaired Receiving Waters, the Nonpoint Source Policy, and the Sediment Amendment and the Stream and Wetland Protection Policy, upon final approval and adoption into the Basin Plan.

Re: Section IV.3.2, Decisions and Approvals Subsequent to Management Plan (pp. IV-3-IV-4)
In September 2003, a timber harvest plan (THP 1-03-093 MEN) located within the JDSF was submitted for review and comment. Regional Water Board staff concluded that the THP did not appear to be written in a manner that was consistent with the overall proposals and objectives of the JDSF Management Plan or the Forest Practice Rules. The DEIR should further discuss how the timber harvest planning process will be written and implemented in a manner that is consistent with the overall objectives of the Management Plan.

Re: Section VI.3, General Description of Alternatives (pp. VI-8-VI-13)
The chosen alternative should incorporate a primary management approach to protect all beneficial uses of water. Only Alternative E already recognizes the protection of water quality as a primary management goal.

Re: Class III Watercourses - Section VII.6.1.12, Habitat Protection (pp. VII.6.1-91- VII.6.1-92) and Section VII.6.1.16, Project Impacts (pp. VII.6.1-99- VII.6.1-111) and Section VII.7.2.4, Geomorphic Processes: Surface Erosion and Mass Wasting (p. VII.7-7-VII.7-11)
While Class I and Class II watercourse protection measures include significant conifer retention standards and other protection measures to partially address protection of watersheds with threatened and impaired conditions, Class III protection measures are limited to providing only equipment limitation zones (ELZs) as defined in the Forest Practice Rules. The DEIR does not appear to acknowledge that under certain circumstances, Class III canopy retention standards may be necessary to mitigate or avoid impacts to downstream Class I and Class II watercourses from specific projects (such as increased sedimentation or bank and channel instability resulting from altered flow patterns). Such mitigation measures do not appear to have been considered in evaluating project impacts under Section 6.1.16. The Section 7.2.4, Harvest Area Surface Erosion, acknowledges one adverse impact where "The harvest-and site preparation-related impacts on surface erosion are greatest at the heads of Class III watercourses, where increased surface runoff causes uphill migration of the definable watercourse into previously unchanneled portions of the headwall swale (Lewis, 1998)." The DEIR and DFMP should address Class III watercourse-specific concerns for increased surface erosion or altered hydrologic effects that may result in channel instability or increased sedimentation. The DEIR and DFMP should then provide for increased Class III protection measures such as canopy retention standards where needed to avoid or mitigate the project impacts and achieve recovery of impaired water bodies.

Re: Road Management Plan, Inventory - Section VII.6.1.12, Habitat Protection (p. VII.6.1-93)
The Road Management Plan, as described in the DEIR, states that all existing roads will be inventoried within the first five years, with a proposal to accelerate that to three years, but does not clearly articulate the schedule for implementing road repairs and road abandonment projects identified in the road inventory. In addition to roads, skid trails also contribute sediment to watercourses, especially at watercourse crossings or where gully and rill erosion along old skid trails intersect a watercourse. Regional Water Board staff recommend the DEIR and DFMP consider an expanded evaluation of skid trail erosion sites as a part of the road inventory to ensure that significant discharges of sediment to watercourses are addressed.

Re: Road Management Plan, Use Restrictions - Section VII.6.1.12, Habitat Protection (p. VII.6.1-93)
The use restrictions for wet weather operations specified in the DEIR may not be adequate to avoid significant sediment inputs which will further impair water quality. Regional Water Board staff recommend the exclusion of heavy equipment operations during the winter period unless necessary for emergency access.

Re: Road Management Plan, Abandonment - Section VII.6.1.12, Habitat Protection (p. VII.6.1-94)
Regional Water Board staff recognize the important criteria listed in the DEIR to abandon roads in close proximity to Class I watercourses with anadromous fish habitat. In addition, Regional Water Board staff recommends that the criteria used to identify and prioritize roads for abandonment should include those roads that are actively discharging sediment or threaten to discharge sediment into any watercourse, further impairing the beneficial uses of water.

Re: Section VII.6.1.4, Monitoring and Adaptive Management, Stream Channel Conditions - Section VII.6.1.12, Habitat Protection (pp. VII.6.1-95-VII.6.1-95)
The in-stream monitoring parameters listed in the DEIR and DFMP are important parameters for monitoring sediment and other impacts to water quality. Large woody debris, pool dimension, pool frequency, embeddedness, substrate size distribution, longitudinal profiles, and benthic macroinvertebrate sampling are all parameters listed with associated water quality targets in the Big River and Noyo River Sediment TMDLs established by the USEPA. The TMDLs also include a water quality target for V*, which should be included as a monitored parameter for stream channel conditions in the DEIR and DFMP. In some instances, other in-stream monitoring parameters, such as turbidity and suspended sediment concentrations, may be useful when a monitoring program is properly designed to document the effects of specific management activities on water quality.

Re: Section VII.6.1.16, Project Impacts, Sedimentation (pp. VII.6.1-100-VII.6.1-101) and Section VII.10.9, Project Impacts, Violate any water quality standards or waste discharge requirements (pp. VII.10-21-VII.10-25)
The DEIR states that "Erosion from road related . . . erosion is expected to continue to decrease as the Accelerated Road Management Plan on the State Forest is implemented . . . [Implementation of the DFMP] would result in a less than significant [sedimentation]." As the Road Management Plan does not specify a schedule for the implementation of road repairs and road abandonment projects, there is no expectation that erosion from roads will decrease in such a way as to have a less than significant impact on the beneficial uses of water. The sedimentation and erosion reduction goals in the DEIR and DFMP should consider the Big River and Noyo River Sediment TMDLs established by the USEPA which lay out the major sediment sources and specify sediment load allocations to each source, including natural and management related sources of landslides, surface erosion, and stream bank erosion. The DEIR and DFMP also should consider the delivery of sediment that occurs from remediations for potential sediment delivery sites; that is, replacing an old, but stable, Humboldt crossing will cause a discharge of sediment in the short term, while avoiding a larger discharge at some point in the future. Too many remediations in a small area has the potential to deliver significant amounts of sediment as the remediation sites "adjust." This needs to be considered spatially and temporally.

Re: Section VII.7.3, Regulatory Framework, State Porter-Cologne Water Quality Act. (pp. VII.7-27- VII.7-29)
The DEIR discusses the General Waste Discharge Requirements for Discharges Related to Timber Harvest Activities on Non-Federal Lands in the North Coast Region, Order No. R1-2004-0030 (GWDR) and states that "Most timber harvest activities on JDSF will be subject to this order." The DEIR does not, however, describe how the requirements of the GWDR, including an inventory of controllable sediment delivery sites and implementation schedule for of prevention and minimization management measures will be integrated with the Road Management Plan.

Re: Section VII.7.4, Proposed JDSF Management Measures, Hill slope Management to Provide for Slope Stability (p. VII.7-30)
Regional Water Board staff concur with the goal of the DFMP to mitigate and maintain slope stability during forest management activities to prevent damage to aquatic habitat and control sedimentation. Regional Water Board staff recommend the priority for slope stability projects also be given to those anthropogenic sediment sources which pose the greatest threat to water quality, regardless of the connection of the sediment source to a THP or other management related activity.

Re: Section VII.7.5, Thresholds of Significance (p. VII.7-35)
Although the DEIR mentions the proposed Sediment Waste Discharge Prohibitions and the Action Plan Basin Plan amendment to the Basin Plan in a footnote on page VII.7-27, it does not discuss the possible implications to the thresholds of significance, particularly if a proposed project would result in substantial soil erosion or the loss of topsoil, as defined in the proposed amendment.

Re: Section VII.10.5, Regulatory Framework (pp. VII.10-14-VII.10-18)
This section should recognize the beneficial uses identified in the Basin Plan for the Big River and Noyo River (see Attachment). The existing beneficial uses for both the Big and Noyo Rivers include: Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Groundwater Recharge (GWR); Freshwater Replenishment (FRSH); Navigation (NAV); Hydropower Generation (POW) existing in the Noyo River only; Water Contact Recreation (REC 1); Non-Contact Water Recreation (REC 2); Commercial and Sport Fishing (COMM); Cold Freshwater Habitat (COLD); Wildlife Habitat (WILD); Rare, Threatened or Endangered Species (RARE); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); and Estuarine Habitat (EST); Aquaculture (AQUA) existing in the Noyo River only. Both rivers are listed with the potential Industrial Process Supply (PRO) beneficial use and the Big River is listed with the potential Hydropower Generation (POW) and Aquaculture (AQUA) beneficial uses.

Re: Section VII.10.5, Regulatory Framework, Federal Clean Water Act (p. VII.10-15)
The sediment load allocations listed in both the Big River and Noyo River Sediment TMDLs call for significant reductions in sediment delivery from several anthropogenic sources, including harvest related mass wasting; skid trail related mass wasting and surface erosion; road related mass wasting, surface erosion, and fluvial erosion; railroad related mass wasting; and grassland landslides. While road related erosion requires the largest reductions, the DEIR and DFMP

should recognize reductions in the delivery of sediment from all sources are important for the protection of the beneficial uses of water.

Re: Section VII.10.5, Regulatory Framework, State Porter-Cologne Water Quality Act (p. VII.10-16)
The DEIR acknowledges the Regional Water Board adoption of Resolution R1-2004-0087, Total Maximum Daily Load Implementation Policy for Sediment Imparied Receiving Waters in the North Coast Region on November 29, 2004. This policy directs staff to use all of its available authorities, and non-regulatory actions to control sediment discharges in the region, with the primary goal of accelerating the restoration of sediment impaired water bodies. The DEIR coupled with the DFMP constitute an opportunity to comply with TMDL implementation, and should be revised to implement road repairs, not just within the scope of timber sales, but in the context of the state forest.

Re: Section VII.10.7, Additional Management Measure for an Accelerated Road Management Plan (p. VI.10-19)
The DEIR states that identified needed road upgrades will be completed as a part of each THP, and based on the availability of staff, contractors, and funding. Staff remain concerned that the December 2005 DEIR does not provide a time schedule for implementation of road upgrades and abandonment, based upon current inventories and knowledge of the exiting miles of roads that may require work. We recommend that JDSF revise the DEIR to address the timeline for prioritizing and conducting the work to upgrade and abandon roads in the JDSF road network. Efforts to address roads with the greatest risk to the beneficial uses of water should begin as soon as possible or concurrent with the road inventories.

Re: Appendix 11, Overview of Existing Sediment Studies
It appears the TMDL-related discussion presented in Appendix 11 is based on two misunderstandings. The first misunderstanding is that the TMDL analyses attribute current sediment delivery solely to current forest practices. For instance, the statement on page 16, last paragraph, first sentence that "...current timber operations under the Forest Practice Rules are unlikely to be responsible for producing 43 to 52% of the current sediment load, as reported by the TMDL work for the Noyo and Big Rivers, respectively." (emphasis added) The statement is incorrect because the TMDLs do not assume or state that current timber operations under the Forest Practice Rules are solely responsible for current management-related sediment delivery. Much of the discussion in Appendix 11 is written to support this statement. Regional Water Board staff recommend that relevant sections of Appendix 11 should be rewritten in order to address and correct this misunderstanding.

The second misunderstanding is that TMDL source analyses are developed from suspended sediment load data. In fact, TMDLs are developed based on upslope sediment source inputs. The first paragraph on Appendix 11 page 3 discusses the work of Koehler and others and states that elevated suspended sediment loads from historic management-related sediment deposits trapped in long-term storage were not considered in the Noyo and Big River TMDLs, which resulted in over-estimation of current upslope sediment delivery in the TMDLs. Later, in point 2 of the fourth bullet on page 19, it states "... in-channel storage of sediment from historic logging operations is a likely source of some of the sediment that TMDLs have attributed to current timber management practices." However, the TMDL estimates of current upslope sediment

delivery are not based on estimates of suspended sediment loads. Regional Water Board staff recommend that the relevant sections of Appendix 11 should be rewritten in order to address and correct this misunderstanding.

Throughout the appendix the terms "sediment inputs," "sediment yield," "sediment production," "sediment loads," and "erosion" are used interchangeably in some cases, and in other cases the same term is used to describe different processes. Also, the term "sediment budget" is incorrectly used to describe just one component of a sediment budget, and changes in storage are considered yields. Regional Water Board staff recommend that the relevant sections of Appendix 11 be rewritten to clearly state that the rates presented are described as either sediment input, output, or change in storage.

Re: Appendix 11, Overview of Existing Sediment Studies, Noyo River Watershed (p. 3)
The second paragraph on page 3 discusses Benda and Associates' analysis of bank erosion rates based on large woody debris loading. The estimates of bank erosion developed by Benda and Associates are incredibly high when compared to estimates developed with other methods, including those presented in Appendix 11. North Coast Water Board staff believe the methodology employed in Benda and Associates study is a novel experimental approach to estimating bank erosion, however the methods need to be peer-reviewed before conclusions can be drawn from the results.

Re: Appendix 11, Comparison of Sediment Yield Estimates (p. 15)
The third paragraph of page 15 discusses Bedrossian and Custis' 2002 review of TMDL sediment source analyses. Regional Water Board staff have thoroughly reviewed Bedrossian and Custis' analysis and much of the data on which their analysis is based, and have determined that their arguments are based on flawed logic, faulty data, and incorrect assumptions.

The DEIR does not explain the contradictions between those studies, the studies presented (Bedrossian and Custis, Koehler and others, and Benda and Associates), and the other sediment source studies presented in Appendix 11 (CDF/Stillwater Sciences, 1999; MRC, 2000; MRC, 2003; USFS-PSW, 2003; Ferrier and others, 2004). Regional Water Board staff recommend that the DEIR either delete the discussion of Bedrossian and Custis, or resolve the contradiction between their arguments and the other sediment source analyses presented in Appendix 11.

Much of the discussion discounting TMDLs in Appendix 11 appears to serve no purpose. The arguments for discounting TMDLs are in conflict with other studies presented, as well as the conclusions drawn from them. It appears, then, that the reason for discounting the TMDLs are based on misunderstandings about the way the TMDLs were developed. Regional Water Board staff recommend that the relevant sections of Appendix 11 that relate to TMDLs should be rewritten to eliminate these contradictions.

Re: Appendix 11, Overview of Existing Sediment Studies, Discussion (p. 15-18)
The management implications of the TMDLs' conclusions are congruent with those arrived at in Appendix 11. The first sentence on page 18 states, "The main lesson to be learned from the sediment studies completed to date in the JDSF EIR assessment area is that roads and watercourse crossings need to be designed, constructed, surfaced, and maintained in a manner that will reduce long-term sediment yield." The document goes on to discuss the importance of

Re: Appendix 12, Table 3, MWAT Thresholds and Standards, (p. 5)
Table 3 contains several errors. The table states that at a 17 C MWAT, coho growth is reduced 20 percent from maximum according to Sullivan and others, 2000. The study actually states that a 20 percent reduction in growth of coho was observed at a 19 C MWAT. The table correctly says that a 10 percent reduction in growth of coho was observed at a 14.8 C MWAT. The table leaves out another threshold from the Sullivan study that states a 10 percent reduction in growth of coho also was observed at a 16.5 C MWMT. Note that Sullivan's MWAT threshold is very close to the 14.5 C threshold observed by Hartwell Welsh and the 16.5 C MWMT is close to the 17.6 C threshold from the Hines and Ambrose study. The results of these three important studies all support each other. Additionally, EPA Region 10 recommended an MWMT of 16 C, not an MWAT of 15 C as reported in the table. Lastly, Oregon adopted EPA's recommended MWMT objectives into its water quality control plan.

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

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December 21, 2007

Mr. Robert Klamt
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

RE: Responses to North Coast Regional Water Quality Control Board Comments on the Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan

Dear Mr. Klamt:

Thank you for your comments on the Jackson Demonstration State Forest (JDSF) Draft Environmental Impact Report (DEIR). Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter A-1, a copy of which is attached. Where our response to your comments indicates a change to the DEIR or the Draft Forest Management Plan, the change is indicated in **boldface type**. The literature cited in our responses to comments is compiled in an attachment to this response letter.

Comment 1

Goals and objectives listed in the DEIR should recognize the need to protect all beneficial uses of water and comply with water quality objectives in accordance with the Basin Plan.

Response to Comment 1

The DEIR and the subsequent 2007 Recirculated Draft EIR for Alternative G reiterate the goals and objectives of the Draft Forest Management Plan (DFMP), which are compiled in Appendix II of the DFMP and Appendix 1 of the RDEIR. Goal #3 most directly addresses water quality issues (from RDEIR):

> <u>Goal #3 - WATERSHED AND ECOLOGICAL PROCESSES</u>: Promote and maintain the health, sustainability, ecological processes, and biological diversity of the forest and watersheds during the conduct of all land management activities.
>
> Objectives:

Maintain a diverse, dynamic matrix of forest habitats and seral stages suitable for a wide variety of native fish and wildlife populations. Manage designated old growth reserves for maintenance of late seral habitat values.

Maintain and recruit structural elements necessary for properly functioning habitats. In riparian areas, manage for late seral habitats, while allowing for flexibility to conduct research on riparian protection zones. Create or naturally develop recovery habitat for listed species.

Work with partners to conduct research and demonstration on the effectiveness of measures to protect watershed and ecological processes from potential management impacts.

Determine which native species, in addition to listed species, are most susceptible to adverse impacts from land management activities and which therefore warrant extra concern.

Provide protection to listed species, to species of concern, and to their occupied habitats. Avoid disturbance to uncommon plant communities such as meadows and pygmy forest.

Utilize forestry practices that will maintain stability of hillslope areas and control sedimentation caused by accelerated mass wasting and surface erosion.

Monitor the development and condition of terrestrial and aquatic habitats over time, and apply adaptive management principles to ensure that goals are met.

Implement a comprehensive road management plan to reduce sediment production, including upgrading roads remaining in the permanent transportation network and properly abandoning high risk riparian roads where possible.

The Administrative Draft Final Forest Management Plan has added these additional objectives to Goal #3:

Protect all beneficial uses of water, comply with water quality objectives in accordance with the Water Quality Control Plan for the North Coast Region (Basin Plan), and implement required TMDL measures.

Comply with other relevant regulations of the North Coast Regional Water Quality Control Board, including the Anti-degradation Policy, TMDL Implementation Policy statement, the Nonpoint Source Policy, and other relevant current regulations, as well as any additional relevant regulations that may be implemented over time.

Note that the DEIR specifically addresses the Basin Plan in several places:

Section VII.6.1, Aquatic Resources, page VII.6.1-90;
Section VII.7, Geology and Soils, beginning on page VII.7-27;
Section VII.10, Hydrology and Water Quality, beginning on page VII.10-15.

Further, it should be noted that all individual timber harvesting operations conducted on JDSF will be subject to the California Forest Practice Rules, which contain substantial measures recognizing and requiring compliance with the Basin Plan and the protection of beneficial uses.

Comment 2

The DEIR should lead to compliance with TMDLs for the Noyo and Big Rivers. TMDL implementation should be clearly incorporated into the Management Plan for JDSF.

Response to Comment 2

TMDL implementation is addressed in the DEIR. On page VII.7-27, footnote 3, the DEIR document states: "On November 29, 2004, the Regional Water Board adopted Resolution No. R1-2004-0087, which is a policy statement to implement sediment TMDLs throughout the North Coast Region for all sediment impaired water bodies. The goals of the TMDL Implementation Policy are to control sediment waste discharges to impaired water bodies so that the TMDLs are met, sediment water quality objectives are attained, and beneficial uses are no longer adversely affected by sediment. JDSF management will comply with this or any other policy of the North Coast Regional Water Quality Control Board that is put into place during or following the preparation of this DEIR." [underline added]

The additional objectives under Goal #3, provided under Comment 1, above, carries this consideration explicitly into the Administrative Draft Final Forest Management Plan.

Comment 3

Instream and upslope watershed targets should be used as an indication of stream condition and attainment of water quality objectives.

Response to Comment 3

Instream and hillslope monitoring to be implemented is well described in Chapter 5 of the Draft Forest Management Plan or the Administrative Draft Final Forest Management Plan, and will provide an indication of stream condition and attainment of water quality objectives. For instream channel conditions, the Administrative Draft Final Forest Management Plan states that "Parameters sampled will vary depending on the stream reach evaluated, but may include:

- LWD frequency by size class, with information on condition and placement
- Pool dimensions (including pool volume], residual pool depth, and useable rearing/holding/overwintering habitat)
- Pool frequency
- Gravel permeability, embeddedness and size distribution (including overall d_{50} of sampled reaches)
- Channel dimensions (measured using transects)
- Longitudinal profiles and cross sections
- Bank conditions and entrenchment
- Benthic macroinvertebrates

These are parameters listed with associated water quality targets for North Coast listed watersheds.

Comment 4

The general policy of the NCRWQCB is to reduce sediment input levels to those suggested by the TMDL, which in the case of the Noyo River is a decrease of 27 percent to an average sediment delivery rate equivalent to not more than 427 tons per square mile per year.

Response to Comment 4

The reductions in road-related sediment yield associated with the implementation of the Accelerated Road Management Plan Additional Management Practice identified in the DEIR and incorporated into the Alternative F and the Administrative Draft Final Forest Management Plan are anticipated to be consistent with the Noyo and Big River TMDL requirements.

Further, management practices identified in the DFMP and the DEIR, and incorporated into the Administrative Draft Final Forest Management Plan will help to ensure that additional new sediment sources do not interfere with the attainment of TMDL goals:

- Hillslope Management practices identified in the DFMP (pages 71-72);
- Operational guidelines for watershed analysis, including roads, riparian zones, watercourses, and hillslopes (DFMP pages 75-76);
- Monitoring and Adaptive Management Goals for hillslope conditions, hillslope monitoring, landslides, and stream channel conditions (DFMP pages 103-104)

Comment 5

It is important that the DEIR recognize previously adopted water quality programs and policies that apply in the North Coast region and to the water bodies in JDSF.

Response to Comment 5

The DEIR recognizes the programs and policies that apply to the waterbodies of JDSF. For example:

- Pages VII.7-27 to VII.7-29 recognize the Federal Clean Water Act, the Porter-Cologne Water Quality Control Act, the Water Quality Control Plan for the North Coast Region, North Coast Regional Water Quality Control Board Resolution No. R1-2004-0087, North Coast Regional Water Quality Control Board Orders No. R1-2004-0030 and No. R1-2004-0016, and the Forest Practice Rules.
- Page VII.10-7 recognizes the TMDLs for the Big and Noyo Rivers.

Also, a number of the North Coast region policies are directly incorporated in the Basin Plan [e.g., the Anti-Degradation Policy (SWRCB Resolution No. 68-16)], which also is recognized in the DEIR, as noted above under Comment 1.

The recognition of North Coast region programs and policies already contained in the DEIR, plus the changes to the Forest Management Plan proposed under Comment 1, will ensure that your concerns under Comment 5 will be addressed.

Comment 6

The objectives in this section should include the protection of the beneficial uses of water, and where water quality is limited, strive to meet water quality standards while achieving other goals and objectives of JDSF.

Response to Comment 6

Please see our response to Comment 1.

Comment 7

The objectives should be expanded to recognize the need to update the DFMP so that it complies with the Anti Degradation Policy, TMDL Implementation Policy statement, the Nonpoint Source Policy, and the Sediment Amendment and the Stream and Wetland Protection Policy, upon approval and adoption into the Basin Plan.

Response to Comment 7

These concerns are addressed by the change to the Forest Management Plan proposed under Comment 1. See also the discussion under Comment 5.

Comment 8

The DEIR should further address how the timber harvest planning process will be written and implemented in a manner that is consistent with the overall objectives of the Management Plan.

Response to Comment 8

This concern is more appropriately addressed with respect to the Forest Management Plan than the DEIR. The Draft Forest Management Plan and the Administrative Draft Final Forest Management Plan both provide a discussion of how timber harvesting and other activities on the Forest will be planned and implemented in a manner that is consistent with the Plan. See the section “Plan Implementation” in Chapter 1 of the Administrative Draft Final Forest Management Plan. Also, see Chapter 5 of the Administrative Draft Final Forest Management Plan, “Monitoring and Adaptive Management.” This chapter describes how the Forest will monitor for the achievement of the goals stated in the Management Plan and implement adaptive management strategies if it is determined that these goals are not being achieved.

Comment 9.

The chosen alternative should incorporate a primary management approach to protect all beneficial uses of water.

Response to Comment 9

First, note the change to Management Plan goals and objectives provided under Comment 1, which explicitly adds an objective of protecting beneficial uses.

The primary management approach of the DFMP (Alternative C1 in the DEIR) and of the Administrative Draft Final Forest Management Plan is to achieve specific goals that comply with the statutory direction given to the State Forests by the Legislature and the policy direction provided by the Board of Forestry and Fire Protection (see DEIR section II and Appendix 5). The Legislature authorized the Board of Forestry and Fire Protection to develop policies that guide the management of the state forest system. Board Policy 0351.2 (page 10, DEIR) states, "The primary purpose of the State forest program is to conduct innovative demonstrations, experiments, and education in forest management. All State forests land uses should serve this purpose in some way." Additionally, Board Policy states, "Timber production will be the primary land use on Jackson, LaTour, and Boggs Mountain State Forests." The DEIR, DFMP, and Administrative Draft Final Forest Management Plan analyze and propose management strategies that are designed to achieve the goals and objectives of the Legislature and Board of Forestry and Fire Protection predicated on compliance with all laws of the State. There is no need to establish a primary goal of compliance with the Basin Plan just as it is not necessary to set a primary goal of compliance with the California Endangered Species Act. Such compliance is mandated and development of the goals and objectives is accomplished within that context.

That said, most of the alternatives included in the DEIR and RDEIR, including the 2002 DFMP, Alternative G, and the Administrative Draft Final Forest Management Plan based on Alternative G, provide a substantial number of measures to protect the beneficial uses of water. These measures are too numerous to reiterate here.

Comment 10

Alternative E would be consistent with the Basin Plan and its provisions recognize the protection of water quality as a primary management goal.

Response to Comment 10

The DEIR determined Alternative E to be the environmentally superior alternative and recognized protection of water quality as a primary management goal. Alternative C1 was determined to best comply with the Legislative Intent and Board Policies set for management of JDSF. Protection of water quality is recognized and thoroughly addressed under Alternative C1.

The 2007 RDEIR examined Alternative G and considered it along with the seven alternatives examined in the 2005 DEIR. The RDEIR found that Alternative E remained the environmentally superior alternative. However, Alternative G provides a number of measures that may provide for better water quality protection than Alternative C1, for example, the designation of substantial additional areas for the development of late seral and older forest characteristics. The Board developed the proposed Administrative Draft Final Forest Management Plan based on Alternative G.

Comment 11

Class III protection measures are limited to providing only equipment limitation zones (ELZs), as defined in the FPRs. The DEIR does not acknowledge that under certain circumstances, Class III canopy retention may be necessary to mitigate or avoid impacts to downstream watercourses. The DEIR and DFMP should address Class III concerns for increased surface erosion or altered hydrologic effects that may result in channel instability or increased sedimentation, and provide for increased Class III protection measures such as canopy retention standards where needed.

Response to Comment 11

The DFMP on page 70 describes that "Bank stability will be promoted by retaining vegetation, establishing equipment exclusion zones (EEZs) or equipment limitation zones (ELZs) along watercourses, and prohibiting ignition of prescribed fire near watercourse." Site-specific investigation at the project level is needed to determine mitigation needed for adequate protection for small Class III channels. The appropriate mitigation for small channels varies greatly based on channel gradient, side slope steepness, soil type, mass wasting hazard, amount of bedrock exposure, and erodibility of the streambanks. Adequate protection measures will be applied following site investigations by qualified individuals, and where appropriate, protection measures may include canopy retention. These same measures are provided in the proposed Administrative Draft Final Forest Management Plan (see Chapter 3).

Class III watercourse-specific concerns will be addressed at the project level during THP preparation in part through the application of the Forest Practice Rules. The concerns expressed by Comment 11 in particular are addressed in the Forest Practice Rules at Title 14 California Code of Regulations § 916 *et seq*.

“Since JDSF is a publicly owned property available for research purposes, protection measures assigned to riparian areas are to remain sufficiently flexible for conducting research on the adequacy of differing riparian protection measures (DFMP p. 70).” Also, "Due to both the research and demonstration mandate for JDSF and the need for flexibility based on site specific requirements, a range of possible riparian prescription measures will be possible (DFMP p. 70).” These same measures are provided in the proposed Administrative Draft Final Forest Management Plan (see Chapter 3).

Comment 12

The Road Management Plan states that all roads will be inventoried within the first five years, with a proposal to accelerate that to three years, but does not articulate a schedule for implementing road repairs and road abandonment projects identified in the inventory.

Response to Comment 12

Scheduling is one of the six main components of the Road Management Plan presented in the DFMP and the Administrative Draft Final Forest Management Plan. As described in these documents and the DEIR, the Road Management Plan consists of a sequential process that involves an inventory and prioritization phase prior to scheduling of specific repairs. Prioritization of repair sites will be based primarily on the potential to impact critical habitat for steelhead and coho salmon, and secondarily on existing rates of sediment delivery to sensitive

watercourse channels and likely hazards such as high density of riparian roads or stream crossings. The schedule for implementing road repairs and abandonment projects identified in the road inventory is not currently known and cannot be determined until completion of the inventory phase and assignment of priorities. Hence, setting this schedule will necessarily follow the Board of Forestry and Fire Protection's certification of the Final EIR and approval of the JDSF Management Plan.

The CAL FIRE budget changes approved beginning fiscal year 2006/07 authorized expenditures of at least $640,000/year for the JDSF roads program, including initial implementation of the Road Management Plan. Also, road upgrades can be accomplished as a part of timber harvesting operations and treated as an expense as a part of those operations.

CAL FIRE will endeavor to accomplish road improvement work at a rate that is, at a minimum, consistent with that called for in the Noyo and Big River TMDL documents. Individual TMDL Implementation Plans will not be generated for these North Coast watersheds. Rather, Water Board staff has determined that sediment waste discharge reduction and attainment of water quality standards can be more effectively achieved without amending the Basin Plan and by addressing all sediment impaired water bodies in the North Coast Region through the "TMDL Implementation Policy for Sediment Impaired Receiving Waters (Resolution No. R1-2004-0087)." This policy will be followed, as is stated in the DEIR.

Comment 13

Skid trail erosion sites should be included as part of the road inventory to ensure that significant discharges of sediment to watercourses are addressed.

Response to Comment 13

The DEIR identifies on page VII.7-22 in the "Sediment Budget" discussion, that it is estimated that approximately 74% of sediment results from road-related surface erosion and road-related landsliding. This estimate established the need for the Road Management Plan analyzed in the DEIR and contained in the DFMP and the Administrative Draft Final Forest Management Plan. Road sites are the identified priority for treatment due to the predominance of sediment originating from these sites.

Past hillslope monitoring efforts conducted by CAL FIRE and the BOF have revealed low rates of sediment delivery from skid trails with properly installed and functioning drainage structures (Cafferata and Munn 2002). Earlier work in California has also shown that skid trails used under the current Forest Practice Rules have not had a large impact on water quality. For example, Euphrat (1992) studied sediment transport related to timber harvesting in the Mokelumne River watershed in the central Sierra Nevada Mountains. The data he collected on numerous skid trails revealed that sediment was not transported to watercourses, and the data implied that relatively little material flowed off other well drained skid trail segments. Additionally, data collected by MacDonald and others (2004) in the central Sierra Nevada Mountains has shown that most harvest units (primarily tractor logged with skid trails) produced relatively little sediment. Similarly, Benda (2003) reported no erosion off well drained skid trails at the Southern Exposure research site in the Antelope Creek watershed in Tehama County. Therefore, including skid trails in the road inventory work is unsupported by past monitoring work conducted in California under the modern FPRs.

Comment 14

The use restrictions for wet weather operations specified in the DEIR may not be adequate to avoid significant sediment inputs which will further impair water quality. Water Board staff recommend the exclusion of heavy equipment operations during the winter period unless necessary for emergency access.

Response to Comment 14

The Road Management Plan contains specific criteria intended to minimize road use during wet weather periods. These restrictions apply to truck traffic and other forms of heavy equipment. Also, the Forest Practice Rules at 14 California Code of Regulations § 916.9 require protection and restoration in watersheds with threatened or impaired values and provides for limited use of heavy equipment operations during the winter period.

Further, the DFMP (p. 76, item 22, under the heading “Hillslopes”) and the Administrative Draft Final Forest Management Plan (Chapter 3) state that winter period operations are to be avoided, except for timber falling and erosion control maintenance. This generally precludes off-road heavy equipment operations not restricted by the Road Management Plan. The Board believes that these criteria address the potential impacts of wet weather operations with more precision and effectiveness than the suggested approach. Finally, the focus on wet conditions applies the restrictions in parts of the fall and spring in addition to the winter.

Comment 15

Water Board staff recommend that the criteria used to identify and prioritize roads for abandonment should include those roads that are actively discharging sediment or threat to discharge sediment into any watercourse.

Response to Comment 15

Active or likely sediment discharge from a road to a watercourse would not necessarily require road abandonment. If the road is an essential element of the road system, it may be retained in an improved configuration wherein the sediment production potential has been mitigated. However, of the roads that are no longer required, those that exhibit existing or potential sediment discharge will be given the highest priority for abandonment.

Comment 16

In addition to the instream monitoring parameters listed in the DFMP, the TMDLs also include a water quality target for V*, which should be included as a monitoring parameter for stream channel conditions in the DEIR and DFMP. Also, in some instances, other monitoring parameters such as turbidity and suspended sediment concentrations may be useful when a monitoring program is properly designed to document the effects of specific management activities.

Response to Comment 16

Stream channel condition monitoring described in the DEIR on pages VII.6.1-95 and -96 was taken from the Management Plan on pages 104-105. On page 104 of the Plan it is described that, "Methods will also be consistent with the current survey methods for woody debris and channel conditions…." As the Plan provides for adaptive management, should it be determined by CAL FIRE that V-star (V*), turbidity, or suspended sediment concentrations should be included as parameters for stream channel monitoring in addition to the stated parameters to be consistent with current survey methods, the Plan can be revised as described on page 100 of the Plan. The foregoing also is applicable to the Administrative Draft Final Forest Management Plan.

Comment 17

As the Road Management Plan does not specify a schedule for the implementation of road repairs and road abandonment projects, there is no expectation that erosion from roads will decrease in such a way as to have a less than significant impact on the beneficial uses of water.

Response to Comment 17

Please see our response to Comment 12. Also, note that the current road conditions on JDSF are an existing, baseline condition that the Road Management Plan will improve upon as it is implemented. Failure to implement the Road Management Plan, should this happen, would not in and of itself cause a significant adverse impact to occur.

Comment 18

The sedimentation and erosion reduction goals in the DEIR and DFMP should consider the Big River and Noyo River Sediment TMDLs established by USEPA which lay out the major sediment sources and specify sediment load allocations to each source, including natural and management related sources of landslides, surface erosion, and stream bank erosion. The DEIR and DFMP should also consider the timing of multiple remediations.

Response to Comment 18

The DEIR considers the Big River and Noyo River sediment TMDLs established by the U.S. EPA. The sediment TMDLs established for Big River and Noyo River are discussed in the DEIR in the Aquatics section (p. VII.6.1-15 and -16), Soils and Geology section (p. VII.7-27), and the Hydrology and Water Quality section (p. VII.10-7). The discussion in the Hydrology and Water Quality section is followed by a discussion, starting on page VII.10-14, of the regulatory Framework where there is a description of how actions resulting from the Forest Management Plan may be subject to the Federal Clean Water Act. Proposed JDSF Management Measures beginning on page VII.10-18 discuss measures in the Plan to achieve water quality goals, including reduced sediment input. Thresholds of significance, beginning on page VII.10-20 in the DEIR, include the following threshold: "An impact of the proposed project would be considered significant to hydrology or water quality if it results in…[a] violation of any water quality standards." This includes the sediment TMDLs established by the U.S. EPA.

Individual TMDL Implementation Plans will not be generated for these North Coast watersheds. Rather, Water Board staff has determined that sediment waste discharge reduction and attainment of water quality standards can be more effectively achieved without amending the Basin Plan and by addressing all sediment impaired water bodies in the North Coast Region through the "TMDL Implementation Policy for Sediment Impaired Receiving Waters (Resolution No. R1-2004-0087)." This policy will be followed, as is stated in the DEIR.

Multiple remediations of sediment sources over time and space within JDSF, or, more importantly, within the relevant cumulative watershed effects assessment area, have the potential to produce both short-term adverse impacts and long-term positive impacts on sediment levels and associated beneficial uses. Sediment reduction practices such as replacement of failing or improperly placed or sized culverts have the potential to cause short-term increases in sediment, while promising to provide a long-term reduction in stream sedimentation. These potentials are recognized in the DEIR on page VIII-39. See also footnote 6 on page VIII-58. The programmatic cumulative effects analysis in the DEIR, which looks across the entire watershed assessment area and considers management on other ownerships, concludes that the DFMP (Alternative C1) will result in a significant beneficial effect on sediment. At the project level, project-based CEQA analysis is likely to be done for most road remediation projects (see the DEIR sections "Programmatic EIRs and Future Projects" at pages II-10 to -14 and "Future Decisions to Implement the JDSF Management Plan" at pages Iv-1 to -2), including, where required, additional cumulative effects analysis that will consider the potential short-term and long-term interaction between the potential sediment effects of multiple road remediation projects. This approach, which will address these effects at the appropriate watershed level of analysis regardless of land ownership, will ensure that the potential short-term increases in sediment that such projects may cause will not result in a significant adverse impact.

Comment 19

The DEIR indicates that most timber harvest activities on JDSF will be subject to a General Waste Discharge Requirement (GWDR), but does not describe how the requirements of the GWDR, including inventory of controllable sediment delivery sites and implementation schedule for prevention and minimization management measures will be integrated with the Road Management Plan.

Response to Comment 19

The NCRWQCB's GWDR program has a two-pronged approach to reduce significant sediment input to watercourses: (1) prevention/minimization of new sediment sources, and (2) development and implementation of a program to mitigate existing sediment source areas through an Erosion Control Plan (ECP). For the latter case, an inventory of controllable sediment delivery sites and implementation schedule is required. Additionally, the Inspection Plan (a form of monitoring) calls for, at a minimum, an inspection of the harvested area by November 15, once following 10 inches of cumulative rainfall, and after April 1 but before June 15 to assess effectiveness of management measures designed to control sediment discharges.

Clearly, the GWDR for an individual Timber Harvesting Plan (THP) will <u>complement</u> the boarder scale Road Management Plan effort. Essentially, these two endeavors which will reduce sediment yields to waterbodies are at two different geographic scales. The Accelerated Road Management Plan inventory will cover the entire Forest in three years, with a schedule

developed to address the most problematic sediment source areas first. The GWDR for an individual THP will cover a relatively small portion of an individual planning watershed, and address the troublesome sites within that much smaller area (likely to be smaller scale problems since the area inventoried is much smaller). The benefits of such a system are readily apparent, because if a THP does not happen to cover an area with significant road problem sites, without the Road Management Plan inventory work and schedule, it could be decades before these significant problem sites were addressed on a THP-by-THP basis. Discussion relating the two efforts is not required in the DEIR, since it is readily apparent that they complement each other to produce sediment reduction and improved water quality.

Comment 20

Water Board staff recommend the priority for slope stability projects be given to anthropogenic sediment sources which pose the greatest threat to water quality, regardless of the connection of the sediment source to a THP or other management-related activity.

Response to Comment 20

Based on data generated in studies within JDSF and other forested environments, the primary source of “anthropogenic sediment” is roads (Cafferata et al. 2007). Because road-related sediment sources are addressed in the Road Management Plan, it appears the DFMP and the Administrative Draft Final Forest Management Plan adequately address the majority of potential anthropogenic sources. Further, as one of the stated Forest Management Goals (p. 5 of DFMP, 3; Chapter 1 of the Administrative Draft Final Forest Management Plan) is to “promote and maintain the health, sustainability, ecological processes, and biological diversity of the forest and watersheds,” it is incumbent upon the JDSF forest managers to address and mitigate significant sediment sources “regardless of the connection…to a THP or other management related activity.”

While the Road Management Plan process provides the overall mechanism for setting the priorities for reducing road related sediment, there also are likely to be opportunities associated with THPs to treat road sediment sources that may be significant, but not necessarily of the highest priority. This outcome is a function of how both State Forest finances and the Forest Practice Rules and THP process work. The management activity and cash flow associated with a THP present the opportunity to fix problems with roads appurtenant to proposed timber operations. These improvements must, at a minimum, meet the requirements of the Forest Practice Rules, the results of the THP development and review process, and the standards put forth in the management plan.

Comment 21

The DEIR does not discuss the possible implications to the thresholds of significance, particularly if a proposed project would result in substantial soil erosion, as defined in the proposed Sediment Waste Discharge Prohibition and Action Plan Basin Plan amendment.

Response to Comment 21

In general, natural systems rarely recognize discrete thresholds and can respond incrementally and interactively to change (Beschta and others 1995). The Administrative Draft Final Forest

Management Plan contains an Accelerated Road Management Plan which addresses the source of 75% of the human caused sediment entering. Given this fact and given the limitations placed on the sources of the other 25% of sedimentation related to human activity (see response to comment 23), it appears unlikely that future thresholds of significance will come into play. The DEIR and RDEIR found that neither the DFMP nor Alternative G, which is the basis for the proposed Administrative Draft Final Forest Management Plan, would result in substantial soil erosion or erosion-related significant adverse impacts.

Currently, the proposed Basin Plan amendment language is not available for review on the North Coast Regional Water Quality Control Board website; as of October 15, 2007, only a project description was available at the website http://www.swrcb.ca.gov/rwqcb1/programs/basinplan/swdp.html). The website also states: "Due to recent loss of basin planning personnel, we regret to inform you that work on this amendment has temporarily been place on hold." The proposed Basin Plan Amendment has not been made public and is not available for our review. Therefore it is not possible at this time to discuss the possible implications of future thresholds of significance that may or may not be included in the proposed Basin Plan amendment.

If the North Coast Regional Water Quality Control Board does at some point in the future approve a Sediment Waste Discharge Prohibition and Action Plan Basin Plan amendment, CAL FIRE will comply with that amendment.

Comment 22

Section VII.10.5 should recognize the beneficial uses identified in the Basin Plan for the Big and Noyo River watersheds.

Response to Comment 22

This section discusses the general regulatory framework in place. Page VII.10-15 presents the water quality objectives from Section 3 of the Basin Plan and identifies that these objectives are important for protecting the beneficial uses. **We will add the following table to section VII.10.5 of the DEIR to provide a listing of beneficial uses within the DEIR:**

Table VII.10.4A. Basin Plan Designated Beneficial Uses for the Noyo and Big Rivers.

Beneficial Use	Basin	
	Noyo River	Big River
Municipal and Domestic Supply	**E**	**E**
Agricultural Supply	**E**	**E**
Industrial Service Supply	**E**	**E**
Industrial Process Supply	**P**	**P**
Groundwater Recharge	**E**	**E**
Freshwater Replenishment	**E**	**E**
Navigation	**E**	**E**
Hydropower Generation	**E**	**P**
Water Contact Recreation	**E**	**E**
Non-Contact Water Recreation	**E**	**E**

Table VII.10.4A. Basin Plan Designated Beneficial Uses for the Noyo and Big Rivers.

Beneficial Use	Basin	
	Noyo River	Big River
Commercial and Sport Fishing	E	E
Cold Freshwater Habitat	E	E
Wildlife Habitat	E	E
Rare, Threatened, or Endangered Species	E	E
Migration of Aquatic Organisms	E	E
Spawning, Reproduction, and/or Early Development	E	E
Estuarine Habitat	E	E
Aquaculture	E	P
E = existing; P = potential		

Comment 23

While road related erosion requires the largest reductions, the DEIR and DFMP should recognize reductions in the delivery of sediment from all sources are important for the protection of the beneficial uses of water.

Response to Comment 23

The DEIR, DFMP, and the Administrative Draft Final Forest Management Plan do recognize that reductions in sediment delivery from all sources are important for the protection of the beneficial uses of water, and not just from road related sources. On page VII.10-19, the DEIR contains the following:

> "To achieve hydrologic and water quality goals, the DFMP incorporates the following plans and measures:
>
> - Special Concern Areas (Appendix III of the DFMP), which includes watercourse and inner gorge protections.
> - Road Management Plan (Appendix VI of the DFMP).
> - Silviculture Allocation Plan (Chapter 3, DFMP pages 47-49).
> - Hillslope Management to Provide for Slope Stability (Chapter 3 DFMP page 71-72).
>
> These measures (as described in the geology and forestry sections) will effectively address hydrology and water quality concerns by working to reduce sediment, turbidity, and peak flow production related to timber operations."

The proposed Administrative Draft Final Forest Management Plan also includes the above measures, in some cases with higher levels of sediment protection (e.g., an Accelerated Road Management Plan and a more restrictive silviculture allocation plan.

Comment 24

Since the DEIR acknowledges the Regional Water Board adoption of Resolution R1-2004-0087, TMDL Implementation Policy, the DEIR coupled with the DFMP should be revised to implement road repairs, not just within the scope of timber sales, but in the context of the state forest.

Response to Comment 24

The Road Management Plan specifies that the inventory of road repair sites will occur on all of the roads throughout the JDSF. High risk road repair sites will be identified with the inventory and completed regardless of whether they are associated with timber sales or not. See also the response to Comment 20, above.

Comment 25

Regional Water Board staff are concerned that the DEIR does not provide a time schedule for implementation of road upgrade and abandonment work. Water Board staff recommend that the DEIR be revised to address the timeline for prioritizing and conducting the work to upgrade and abandon roads.

Response to Comment 25

Please see the response to Comment 12.

Comment 26

The TMDL-related discussion presented in Appendix 11 is based on the misunderstanding that the TMDL analyses attribute current sediment delivery solely to current forest practices. The TMDLs do not assume that current timber operations under the FPRs are solely responsible for current management-related sediment delivery. Relevant sections of Appendix 11 should be rewritten to address this misunderstanding.

Response to Comment 26

The acknowledgement below will be added to Appendix 11.

We agree with the comments of the North Coast Regional Water Quality Control Board staff, per the TMDL documents for the Noyo and Big Rivers, that both legacy practices and current practices contribute sediment that is delivered to stream channels during a given period of time. That being said, it appears that a major portion of this comment relates to disagreement over the conclusions of the South Fork Noyo River sediment study produced by Koehler and others (2001). Dr. Lee Benda, Graham Matthews, and Rich Koehler all agree that sediment trapped in long-term storage along the South Fork Noyo River channel is transported downstream in high-discharge events, and that this sediment increases the overall suspended sediment load. If the source is not properly accounted for, this suspended sediment could be incorrectly attributed to recent upslope sources, which would lead to an overestimation of the sediment generated by contemporary upslope management practices. This distinction is important, particularly

because some scientists believe that remobilized historic or legacy sediment-derived increases in suspended sediment load are likely to be a significant, unrecognized sediment source. This view is shared by Graham Matthews, who wrote the sediment source area analysis reports that the Big and Noyo River TMDL documents were based on, and was a co-author of the South Fork Noyo Report (Koehler and others 2001).

Comment 27

The TMDL-related discussion presented in Appendix 11 also incorporates the misunderstanding that TMDL source analyses are developed from suspended sediment load data, when in fact they are developed based on upslope sediment source inputs.

Response to Comment 27

We agree with Regional Water Board staff that TMDL estimates of current upslope sediment delivery are not based on estimates of suspended sediment loads. However, it has been found that the TMDL work likely attributed excessive sediment production to modern timber management due to inadequate accounting of fine sediment in long-term channel storage, as was documented in the South Fork Noyo River watershed with suspended sediment sampling. Koehler and others (2001) stated this when they wrote: “This sediment increases the overall suspended sediment load and can lead to an overestimation of the sediment generated by upslope management practices.” Benda and others (2004) summarized this concern when they reported:

> The conclusion that sediment input or sediment yield rates in the Noyo River sediment budget (GMA 1999) are significantly underestimated was also reached by Koehler et al. (2002) who speculated that in the Noyo River “remobilized historic sediment […due to large volumes of sediment delivered to channels in response to past logging activities…] appears to increase suspended sediment load and may be a significant, unrecognized sediment source.

Comment 28

Throughout Appendix 11, terms such as sediment inputs, sediment yields, sediment production, sediment loads, and erosion are used interchangeably in some cases, and in other cases the same term is used to describe different processes. Also, the term sediment budget is incorrectly used to describe just one component of a sediment budget, and changes in storage are considered yields. Water Board staff suggest rewriting this section to state that the rates presented are described as either sediment input, output, or change in storage.

Response to Comment 28

After review of the document, the Board agrees with the NCRWQCB staff that there are some places in Appendix 11 where there is inaccurate usage of terms. The Board does not believe that the inconsistent use of terms resulted in incorrect findings being made.

Comment 29

Benda and Associates' estimates of bank erosion are too high when compared to estimates developed from other methods. Their methods need to be peer-reviewed before conclusions can be drawn from the results.

Response to Comment 29

As stated in Appendix 11 and in the reports that Benda and others have authored on wood recruitment on the Mendocino Coast, much of the high (in some cases unnatural) rates of bank erosion are thought to be legacy effects of historic logging and stream cleaning practices. Also, similar to the results reported by Benda and Associates (2004), the recent work by Dewey and others (2003) and Dewey 2007 show that bank erosion is a very important sediment source in the Caspar Creek watershed, which is located within JDSF.

Peer review of the Benda and Associates methods have occurred. Descriptions of Benda and Associates' procedures for calculating rates of bank erosion and soil creep using the wood budget approach are provided in numerous published papers, including the following:

> Benda, L., D. Miller, J. Sias, D. Martin, R. Bilby, C. Veldhuisen, and T. Dunne. 2003. Wood recruitment processes and wood budgeting. American Fisheries Society Symposium 37: 49073.
>
> Benda, L., P. Bigelow, and T. Worsley. 2002. Recruitment of wood to streams in old growth and second growth redwood forests in northern California. Canadian Journal of Forest Research, V.32:1460-1477. Found at: http://www.earthsystems.net/docs/for82.pdf
>
> Benda, L. and J. Sias. 2003. A quantitative framework for evaluating the mass balance of in-stream organic debris. Forest Ecology and Management, V.172:1-6.

Comment 30

Regional Water Board staff have reviewed Bedrossian and Custis (2002) and determined that their arguments are based on flawed logic, faulty data, and incorrect assumptions. Water Board staff recommend that the DEIR either delete the discussion of Bedrossian and Custis (2002) or resolve the contradiction between their arguments and the others sediment source analyses presented in Appendix 11.

Response to Comment 30

Appendix 11 in the DEIR reports the wide range of estimated values for sediment yields by the various authors cited. Contradictions between sediment production values are explained in Appendix 11 as being due to differences in methodologies, time periods, and watershed scales, as well as due to variation in the types and combinations of sediment sources used to arrive at overall estimates. Reasons for differing estimates of sediment production are listed in the section in Appendix 11 titled "Comparison of Sediment Yield Estimates."

Unbiased, long-term (or background) sediment production estimates are provided by cosmogenic radionuclide data, and Bedrossian and Custis' (2002) values are broadly consistent with results produced with this methodology. Specifically, the Bedrossian and Custis background sediment production rates are broadly consistent with the long-term rates determined quantitatively by the cosmogenic radionuclide procedure used by Ferrier and others (2005) in North Coast watersheds (including the Caspar Creek watershed), and published in a peer-reviewed journal:

> Ferrier, K.L., J.W. Kirchner and R.C. Finkel. 2005. Erosion rates over millennial and decadal timescales at Caspar Creek and Redwood Creek, Northern California Coast Ranges. Earth Surface Processes and Landforms 30: 1025-1038. Found at: http://seismo.berkeley.edu/~kirchner/reprints/2005_75_Ferrier_coast_range_erosion.pdf

They are also broadly consistent with the long-term cosmogenic radionuclide data produced for the Ten Mile River watershed (adjacent to the Noyo River watershed) by Benda and Associates (2004).

Comment 31

Regional Water Board staff recommends that the relevant sections of Appendix 11 that relate to TMDLs be rewritten to eliminate contradictions with other cited studies.

Response to Comment 31

Please see our response to Comment 30.

Comment 32

The management implications of the TMDLs' conclusions are consistent with those arrived at in Appendix 11. It is unclear why other parts of Appendix 11 discount the TMDLs.

Response to Comment 32

References to the TMDL in Appendix 11 are made to provide an accurate description of sediment production rates within the JDSF EIR assessment area. Potential problem areas within the TMDL documents for the Noyo and Big River watersheds are described to more clearly indicate realistic sediment production rates from different types of management and non-management (background) sources, and to put management-related sediment production in proper context with long-term background rates. The important point is that the management implications of the TMDL's conclusions are consistent with those stated in Appendix 11, as your comments noted.

Comment 33

The DEIR references the Hartwell Welsh study, “researchers found juvenile coho present in 18 of 21 tributaries of the Mattole River with MWATs up to 16.7° C.” We suggest the DEIR clarify the results of the study.

Response to comment 33

This study surveyed 21 tributaries in the Mattole River for the presence of coho. The study examined the relationship between MWAT and the presence or absence of coho. As stated in the DEIR (DEIR, Appendix 12, p. 4), Welsh et al. (2001) found juvenile coho present in tributaries with MWATs up to 16.7° C. Similarly, they were absent in all 9 streams sampled that had MWAT greater than 16.7° C. Coho were found in all streams with MWATs lower than 14.5° C. As stated in the NCRWQCB comment, the paper implies a threshold for coho, “MWAT greater than 16.8° C may preclude the presence of coho salmon in the Mattole.” However, Welsh et al. caution applying this as a goal or target in other streams without knowledge of the temperature regime prior to land management, noting that “Although these temperatures imply an upper limit for coho salmon in the Mattole, they cannot serve as goals or targets for particular streams without consideration of historical thermal regimes in those streams in the absence of management activities (p. 468).” The historical temperature regimes for streams in JDSF, prior to timber harvesting, are not well known. However, the DEIR does discuss the logging history and its influence on water temperature (DEIR, Appendix 12, p. 6-8).

Comment 34

To ensure full protection of coho from temperature impairments, MWATs should be below 14.5° C. Marginal protection is provided between 14.5° C and 16.7° C and anything above 16.7° C is unsuitable.

Response to Comment 34

An MWAT value of 14.5° C may indeed represent an optimum temperature regime that fully protects coho. CAL FIRE is committed to working towards this as a target in streams where an MWAT of 14.5° C is realistic and achievable. CAL FIRE chose a threshold value such that temperatures beyond that range would provide a likely indicator of impairment and suggest the need for further mitigation. The threshold value is also well below any known lethal limits for salmonids (Brett, 1952; Brungs and Jones, 1977; Sullivan et al., 2000).

Rather than a single MWAT value, there are likely to be a range of temperatures that are suitable for coho and many site-specific factors will influence the temperature requirements for coho and other salmonids. The DEIR presents and discusses a range of MWAT temperatures and their implication on salmonids (DEIR, Appendix 12). Further, CAL FIRE is committed to supporting the recovery of coho by maintaining and enhancing fish habitat. Riparian areas bordering Class I and Class II watercourses are considered Special Concern Areas (SCA) and will be managed to promote the development of late seral forest stand conditions (DEIR, VII.6.3-8; VII.6.3-26). The proposed management plan is expected to improve canopy cover over current conditions, promote the development of late seral conditions in the Watercourse and Lake Protection Zones (WLPZs), and contribute to reaching desired temperature targets for coho. Canopy cover retention targets for Class I and Class II watercourses are designed to avoid or minimize impacts to stream temperatures and are consistent with WLPZ widths and

canopy retention objectives as outlined in the Board of Forestry Threatened or Impaired Watersheds rules (14 CCR § 916.9) (DFMP, p. 70; DEIR, VII.6.6.118-122; proposed Administrative Draft Final Forest Management Plan, Chapter 3). For the reasons listed above (canopy retention and late seral emphasis), the project as implemented is not expected to further degrade water temperature beyond existing conditions and is expected to improve conditions over time.

Many streams on JDSF meet or exceed water temperature targets that may be considered optimum for coho. In streams where optimum water temperature goals are realistic and achievable, CAL FIRE will continue to work toward meeting and exceeding those targets. In addition, CAL FIRE is committed to monitoring stream temperature and adapt projects as needed to lessen the risk of impacts to stream temperatures.

Comment 35

Hines and Ambrose (2000) use the term “MWAT” for their statistic that in fact is a maximum weekly maximum temperature (MWMT). In other words, the significant stream temperature statistics were calculated from the daily maximum temperatures that define the MWMT statistic, not the daily average temperatures that define the MWAT.

Response to Comment 35

We have a limited ability to verify the error that the NCRWQCB has identified in the paper by Hines and Ambrose. The DEIR did not rely on this study solely as the basis for an MWAT objective. Rather, it included this study because it includes an analysis of stream temperature data that was conducted within the project area. The Board will assume that the personal communication discussed by the NCRWQCB is accurate and notes the correction to the Hines and Ambrose paper.

Comment 36

Table 3, Appendix 12, MWAT Thresholds and Standards. The comment states that, “Table 3 contains several errors.” The errors identified were as follows:

1. Table states that at a 17° C MWAT, coho growth is reduced 20% from maximum based on a study by Sullivan et al. (2000) when the study actually states that a 20% reduction in growth occurs at 19° C MWAT.

2. Table 3 omits a threshold at 16.5° C MWMT that corresponds with a 10% reduction in growth of coho.

3. EPA recommended an MWMT of 16° C, not an MWAT of 15° C as reported in the table.

Response to comment 36

As noted in the DEIR, the source of the table is from the NCRWQCB. **After reviewing the literature the Board has made corrections to the table and will provide the corrected table as errata.**

1. **The Board reviewed the citation and agrees with the correction.**

2. **The table was intended to present MWAT thresholds. However, the Board notes the relevance of the MWMT threshold of 16.5° C corresponding with a 10% reduction in growth and will add it to the table as a foot note:**

MWAT Thresholds and Standards		
Temperature (C)	**Descriptions**	**Temperature (F)**
26	Upper end of range of acute thresholds (considered lethal to salmonids)	78.8
25		77.0
24	Lower end of range of acute thresholds (considered lethal to salmonids)	75.2
23		73.4
22		71.6
21		69.8
20		68.0
19	Steelhead growth reduced 20% from maximum (Sullivan and others, 2000).MWAT metric USEPA (1977) growth MWAT for rainbow trout Coho growth reduced 20% from maximum (Sullivan and others, 2000), MWAT metric	66.2
18	USEPA (1977) growth MWAT for coho	64.4
17	Steelhead growth reduced 10% from maximum.	62.6
16.8	**NMFS MWAT threshold.**	**62.2**
16.7	Welsh and others (2001) MWAT threshold for coho presence/absence in the Mattole	62.1
16	Oregon Dept. of Environmental Quality Standard for salmonids (equivalent MWAT calculated from 7-day max.)	60.8
15	EPA Region 10 Recommended MWAT. Threshold for Coldwater Salmonid Rearing	59.0
14.8	Coho growth reduced 10% from maximum (Sullivan and others, 2000), MWAT metric	**58.6**
14.6	Upper end of preferred rearing range of coho	58.3
14.3	Washington Dept. of Ecology standard (equivalent MWAT calculated from annual max.)	57.7
14		57.2
13	Upper end of preferred rearing range for steelhead.	55.4
Note: A 16.5 C **MWMT** corresponds with a 10% reduction in growth of coho.		

3. EPA Region 10 guidelines (p.9) state, “The seven-day average of the daily maximum temperatures should not exceed 16°C (61°F), and the weekly mean temperature should not exceed 15°C (59°F).” This suggests that the entry in the table was correct.

Thank you for your detailed comments on the JDSF Draft Management Plan and DEIR. We look forward to the implementation of a new management plan on JDSF and to working with the North Coast Board as an important partner in the protection and enhancement of water quality.

Sincerely,

Stan L. Dixon
Chairman

Attachment

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KRISTI FURMAN
Clerk of the Board

A-2

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COUNTY OF MENDOCINO
BOARD OF SUPERVISORS
501 Low Gap Road • Room 1090
Ukiah, California 95482

RECEIVED BY
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BOARD OF FORESTRY
AND FIRE PROTECTION

February 21, 2006

Stan L. Dixon, Chairman
State Board of Forestry and Fire Protection
P. O. Box 944246
Sacramento, CA 94244-2460

RE: Mendocino County Board of Supervisors Comment on the Draft Management Plan for the Jackson Demonstration State Forest *(Public Comment period to close on March 1, 2006)*

Dear Chairman Dixon:

At their regular meeting of February 7, 2006, the Mendocino County Board of Supervisors adopted a resolution supporting Alternative D regarding the DEIR for the Jackson Demonstration State Forest (JDSF).

A copy of the Board's resolution is enclosed for your reference. If you have any questions regarding this matter, please feel free to contact our office at (707) 463-4221.

Sincerely,

Kristi Furman, Clerk of the Board
Mendocino County Board of Supervisors

cc: Ruben Grijalva, Director, California Department of Forestry and Fire Protection
Russ Henly, Deputy Director, California Department of Forestry and Fire Protection
Senator Wes Chesbro
Assemblymember Patty Berg
Mayor Dave Turner, City of Fort Bragg
Mayor Leslie Dahlhoff, City of Point Arena
Mayor Tami Jorgensen, City of Willits
Mayor Mark Ashiku, City of Ukiah
Greg Giusti, Mendocino County Forest Council

THE BOARD OF SUPERVISORS

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HAL WAGENET, Third District
KENDALL SMITH, Fourth District
J. DAVID COLFAX, Fifth District

RESOLUTION NO. 06-027

RESOLUTION OF THE BOARD OF SUPERVISORS OF THE STATE OF CALIFORNIA, COUNTY OF MENDOCINO, STATING A POSITION ON THE DEIR FOR JACKSON DEMONSTRATION STATE FOREST (JDSF)

WHEREAS, the Mendocino County Board of Supervisors wishes to enter into the Public Record, their position on the DEIR for Jackson Demonstration State Forest; and

WHEREAS, the Forest Council of Mendocino County met on February 6, 2006, to review and discuss the proposed DEIR for the JDSF; and

WHEREAS, the Mendocino County Board of Supervisors met on February 7, 2006, to review and discuss the proposed DEIR for the JDSF; and

1 WHEREAS, this matter is of extreme importance to the future of Mendocino County and the State of California; and

2 WHEREAS, in Mendocino County universal support exists for active forest management on JDSF; and

3 WHEREAS, in Mendocino County universal support for sustaining funding mechanisms for all the state forests exists; and

4 WHEREAS, Intense community concern over even-age management and the application of herbicides, has existed for a very long time.

5 NOW THEREFORE BE IT RESOLVED, that the Mendocino County Board of Supervisors supports Alternative D, which balances environmental values, economic viability, public support and promotes the vision and leadership needed to sustain a healthy forest products infrastructure in California.

6 BE IT FURTHER RESOLVED, that the Mendocino County Board of Supervisors also wishes to communicate its strong recommendation to the Board of Forestry that they protect the public's investment at JDSF by doing its utmost to assure a sustainable level of funding for forest operations and maintenance, road rehabilitation, environmental science staff, and a robust recreation and forest education program.

The foregoing Resolution introduced by Supervisor Wagenet, seconded by Supervisor Smith, and carried this 7th day of February, 2006, by the following vote:

AYES: Supervisors Wagenet, Smith, and Colfax
NOES: Supervisors Delbar and Wattenburger
ABSENT: None

WHEREUPON, the Chair declared said Resolution adopted and SO ORDERED.

J. DAVID COLFAX, Chair
Mendocino County Board of Supervisors

ATTEST: KRISTI FURMAN
Clerk of the Board

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION
P.O. Box 944246
SACRAMENTO, CA 94244-2460
Website: www.bof.fire.ca.gov
(916) 653-8007

Kristi Furman
Clerk of the Board
Mendocino County Board of Supervisors
501 Low Gap Road, Room 1091
Ukiah, CA 95482

RE: Responses to the Mendocino County Board of Supervisors Comments on the Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan

Dear Ms. Furman:

The Board of Forestry and Fire Protection offers its thanks to the Mendocino County Board of Supervisors for its February 7, 2006 resolution regarding the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. Our responses to the Board of Supervisors' resolution are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter A-2, a copy of which is attached.

While many of the Board of Supervisors' comments do not go directly to potential physical impacts on the environment of the proposed management plan, which is the main focus of the DEIR, they do speak to important policy issues. Also, we note that since the Board of Supervisors' comments on the 2005 DEIR, the Board of Forestry and Fire Protection has issued Revised Draft Environmental Impact Report for Alternative G. We also are in receipt of your comments on that document and will reply separately to those comments.

Comment 1

This matter is of extreme importance to the future of Mendocino County and the State of California.

Response to Comment 1

The Board of Forestry and Fire Protection concurs that this matter is important. The importance of JDSF to Mendocino County, the North Coast region, and the state is documented in the DEIR in a number of places, including Chapter III Project Information, and Chapter V Environmental Setting.

Comment 2

In Mendocino County universal support exists for active forest management on JDSF.

Response to Comment 2

As indicated in our policies for the management of JDSF (detailed in Appendix 5 of the DEIR), and the recently proposed Administrative Draft Final Forest Management Plan for JDSF, the Board, too, supports active management of JDSF.

Comment 3

In Mendocino County universal support for sustaining funding mechanisms for all the state forests exists.

Response to Comment 3

The Board shares the County's concerns for funding of JDSF and the other Demonstration State Forests. Budget action recently taken for the 2006/07 fiscal year significantly improves the budget situation for the Demonstration State Forests. Further, it removes all programs other than the Demonstration State Forests from funding through the Forest Resources improvement Fund, which is where State Forest timber harvest revenues are deposited. Please see also our response to Comment 6, below.

Comment 4

Intense community concern over even-age management and the application of herbicides has existed for a very long time.

Response to Comment 4

The Board has become well aware of these issues through the public comment received during the scoping and commenting processes for the Draft Management Plan and DEIR. The DEIR (see page I-5) specifically recognizes these as areas of controversy regarding the management of JDSF. The DEIR dedicates substantial discussion and analysis to these issues in a number of places, including Chapters VII.6.3 Timber Resources, VII.6.4 Forest Protection, VII.6.6 Wildlife, and VII.8 Hazards and Hazardous Materials.

The Board of Forestry and Fire Protection's Alternative G and the proposed Administrative Draft Final Forest Management Plan based on Alternative G both provide greater limits on the use of even-aged management and herbicides than Alternative C1. For example, the latter Plan limits even-aged management to no more than 2,700 acres per decade.

Comment 5

The Mendocino County Board of Supervisors supports Alternative D, which balances environmental values, economic viability, public support and promotes the vision and leadership needed to sustain a healthy forest products infrastructure in California.

Response to Comment 5

The Board of Forestry and Fire Protection recognizes the Board of Supervisors' letter of June 26, 2007, which expressed support for Alternative G, which was presented in the RDEIR. The Board of Forestry and Fire Protection's proposed Administrative Draft Final Forest Management Plan is based on Alternative G, which incorporates many of the elements recommended by the Mendocino Working Group. We recognize the importance of balancing many values in determining the management direction for JDSF and believe that the direction we have developed provides an appropriate balance of these values and provides a cutting-edge vision for the management of the Forest. The JDSF management goals and objectives that are presented in Chapter 1 of the Administrative Draft Final Forest Management Plan demonstrate this balance and vision.

Comment 6

The Mendocino County Board of Supervisors also wishes to communicate its strong recommendation to the Board of Forestry that they protect the public's investment at JDSF by doing its utmost to assure a sustainable level of funding for forest operations and maintenance, road rehabilitation, environmental science staff, and a robust recreation and forest education program.

Response to Comment 6

The Board concurs with the Board of Supervisors on the importance of this issue and believes that the increased funding and staffing authorized for JDSF beginning with the State's 2006/07 budget will result in a significant improvement in this area. For example, a new Senior Wildlife Biologist has been added to the Forest's staff. However, JDSF cannot operate at the funding level authorized until it actually generates the revenues needed to support that level, through returning to active timber harvesting.

We thank the Board of Supervisors for its ongoing interest in the management of JDSF and its comments on the environmental review and management planning processes. We look forward to the implementation of a new management plan on JDSF and to working with the Board of Supervisors and the Mendocino County Forest Council as important partners in the management of JDSF.

Sincerely,

Stan L. Dixon
Chairman

Attachment

cc: Members of Board of Supervisors

HAL WAGENET
Supervisor
Third District

Office Phone: (707) 463-4221
Office Fax: (707) 463-4245

A-2a

COUNTY OF MENDOCINO
BOARD OF SUPERVISORS
501 Low Gap Road • Room 1090
Ukiah, California 95482

RECEIVED BY
FEB 28 2006
BOARD OF FORESTRY
AND FIRE PROTECTION

February 26, 2006

George D. Gentry
Executive Officer
Board of Forestry and Fire Protection
PO Box 94246
Sacramento, CA 94224-2460

RE: JDSF DRAFT EIR
Option D **Position: SUPPORT**

Dear YG & Board of Forestry;

1 **I write to support Option D** in the JDSF Draft EIR now under consideration. This option is based on earlier recommendations of the Citizen Advisory Committee established by then CDF Director Richard Wilson. It supports a substantial harvest level and includes several features strongly recommended by the public:

- Management toward late seral structure
- Reduced use of herbicides
- Reduced use of even-aged management practices

2 As Mendocino County's representative to the Demonstration State Forest Advisory Group and the Forest Council, and with a lifetime of experience in the forest products industry as a sawmill operator, I can tell you that the public's support is critical to your decis on.

I convened several public hearings in Mendocino County and encouraged the DSFAG to make a commitment to Option D in order to obtain public support, generate a revenue stream and maintain scientific, as opposed to political, management of Jackson.

3 A repeated theme emerged during the hearings. It is not part of the DEIR, but you should hear this in clear unequivocal language. Both the public and professional sectors are very strongly in favor of a baseline "sustainable funding" strategy for management of the entire State Demonstration Forest system anchored by sufficient harvest levels in Jackson.

4 The influence of the urban voter on forest management has never been stronger and the communication between BOF and CDF to the public has degenerated into a series of court actions, rather than science. The Board of Forestry has within its hand today, the opportunity to set a new course acceptable to the public.

I sincerely hope you find it in the best interests of the Jackson State Forest to select Option D.

Sincerely,

Hal Wagenet
3rd District Supervisor
Mendocino County

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION
P.O. Box 944246
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(916) 653-8007

Hal Wagenet
Third District Supervisor
Mendocino County Board of Supervisors
501 Low Gap Road, Room 1091
Ukiah, CA 95482

RE: Responses to Comments on the Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan

Dear Supervisor Wagenet:

Thank you for your February 26, 2006 comment letter on the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. Our responses to your letter are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter A-2a, a copy of which is attached.

While a number of your comments do not go directly to potential physical impacts on the environment of the proposed management plan, which is the main focus of the DEIR, they do speak to important policy issues. We also note that, since the time of your February 26, 2006, letter, the Board of Forestry and Fire Protection released the Recirculated Draft Environmental Impact Report (RDEIR) for Alternative G.

Comment 1

I write to support Option D in the DEIR, as based on the Citizen Advisory Committee appointed by former CDF Director Richard Wilson. It supports a substantial harvest level and includes features strongly recommended by the public with respect to late seral structure, reduced use of herbicides, and use of even-aged management.

Response to Comment 1

The DEIR includes a thorough analysis of Alternative D, and the Board has given this alternative, its management direction, and its environmental impact potential careful consideration. While your comments do not go directly to potential physical impacts on the environment, the Board recognizes the proposed policy changes you suggest reflect important public concerns.

Alternative G and the proposed Administrative Draft Final Forest Management Plan, which is based on Alternative G, provide greater areas of the Forest dedicated to older forest structure (over one-third) and added restrictions on the use of herbicides and even-aged management.

Comment 2

The public's support is critical to your decision.

Response to Comment 2

While your comments do not go directly to potential physical impacts on the environment, the Board recognizes the importance of public comment regarding and support of management of JDSF. We provided substantial opportunity for public comment on the Draft Management Plan, DEIR and RDEIR. We have carefully reviewed and considered all of the public comments we received.

Comment 3

Both the public and professional sectors are very strongly in favor of a sustainable funding strategy for the entire Demonstration State Forest system, anchored by harvest levels at JDSF.

Response to Comment 3

The Board shares your concerns for funding of JDSF and the other Demonstration State Forests. Budget action taken by the State Legislature in the 2006/07 fiscal improved the budget structure for the Demonstration State Forests; however, these benefits cannot be fully realized until timber harvesting resumes on JDSF and the resulting harvest revenues are realized.

Comment 4

The influence of the urban voter on forest management has never been stronger and the communication between the Board of Forestry and the public has degenerated into a series of court actions, rather than science. The Board has the opportunity to set a new course acceptable to the public.

Response to Comment 4

Please see our response to Comment 2. The new management direction we have developed for JDSF, through Alternative G and the proposed Administrative Draft Final Forest Management, is responsive to public comment and includes a number

of substantial changes from the 1986 management plan. For example, this new direction emphasizes a research-driven mission for JDSF.

I appreciate you taking the time to provide your comments on the JDSF Draft Management Plan and DEIR. The Board looks forward to the implementation of a new management plan on JDSF and to working with the Board of Supervisors and the Mendocino County Forest Council as important partners in the management of JDSF.

Sincerely,

Stan L. Dixon
Chairman

Attachment

A-3

Gary Nakamura (chair)
Jonathon Ambrose
Kathy Bailey
Dave Finigan
Mike Jani
Joe McBride
Marcia McNally
Matt O'Connor
Steve Staub
Hal Wagenet
Don Yasuda

Demonstration State Forests Advisory Group, State of California

February 27, 2006

Stan Dixon, Chairman
and George D. Gentry, Executive Officer
Board of Forestry and Fire Protection
P.O. Box 94244-2460

RE: Comments on the Draft EIR for the Jackson Demonstration State Forest Management Plan, December 2005

Dear Sirs:

As the members of the Demonstration State Forests Advisory Group we are writing to comment on the Draft EIR for Jackson Demonstration State Forest (JDSF) released by
1 the California Board of Forestry and Fire Protection in December 2005. We commend the Board and Department staff. The weaving together of history, academic literature, trend analysis, and scientific research provide a window into JDSF's operations, its challenges, and opportunities. The document is long but interesting and impressive.

Convened by the Director of the California Department of Forestry and Fire Protection (CDF) it is our charge to provide advice on the research and demonstration activities of the state forests. In doing this we represent a broad view, coming from forestry (Nakamura, Jani, McBride, and Staub), fisheries (Ambrose), wildlife biology (Yasuda), hydrology (O'Connor), open space planning (McNally), local government (Finigan and Wagenet), and conservation advocacy (Bailey).

Since early 2005 we have met periodically on the state forest to learn in the field about management activities and to discuss research needs for the program state-wide. In December we drafted a preliminary list of research initiatives which we will be discussing in the months to come. A good deal of our discussion has focused on forest certification but other equally important research needs include:

2
1. How can the conversion of working forests be slowed, in particular what will make the best economic argument to forest landowners?
2. What role does a demonstration state forest play in preventing fragmentation of the larger, landscape-scale forest and its function as wildlife habitat, watershed, source of income for a local community, and so on?
3. What is the mutuality of revenue generation and demonstration of a working forest and how can this be communicated to the public?

2

4. What environmental services does a state forest provide?
5. How can working forests be compatible with and contribute to the quality of life goals of neighbors and communities?
6. What are ways to inform and engage state forest neighbors and the interested public in stewardship, such as participatory or all-party monitoring?
7. How can silvicultural practices address critical environmental needs while embracing opportunities such as carbon sequestration?
8. What is the appropriate technology and level of infrastructure for the state forest, particularly road construction and maintenance?
9. What are effective ways to demonstrate contemporary and emerging forest practices, inventory techniques, and so on to small-acreage, non-industrial forest landowners?
10. What is the changing face of California demographics, what forest values do citizens hold, and how can the state forest provide this citizenry with relevant demonstrations and appropriate recreation opportunities?
11. Are there externalities in environmental advocacy in California, in other words what are we exporting in terms of environmental impacts to those regions harvesting timber and producing products imported to California?

3 These are issues we expect to be addressed in state forest research. That said, we are aware that effective research and demonstration has been elusive on JDSF. In 1980 under the leadership of Professor John Helms a task force found that there had been a disproportionate emphasis on timber management and sales despite statute and Board policies that identified demonstration as a primary reason for the state to own forest land. JDSF and CDF have the opportunity to change this situation with a new management plan for the forest. By elevating the primacy of watershed and ecological process and research and demonstration to that of timber production this can be accomplished. We recognize efforts to address this critical need in the Draft EIR and urge the Board to hold the Department's feet to the fire in implementing these objectives. This Advisory Group will be watching to see how this mandate emerges in management activities on the forest.

4 The DSFAG members all agree that the effective use of the Demonstration State Forests suffers from the lack of adequate, certain, and sustained funding. We agree that timber harvest receipts from Jackson State Demonstration Forest are an appropriate source for some of this funding and that revenue generated by JDSF can be used to support research and demonstration activities at other Demonstration State Forests as well as at Jackson.

5 The DSFAG members have not come to consensus on supporting a particular EIR Option. We have restricted our advice to the implications of the Options for research and demonstration, and find that Options vary in their emphasis or ability to research and demonstrate even-aged management, herbicide applications, and other practices. The Options also vary in the potential revenue they might generate, being greatest with Options C, and less with D, E, and F (80 % to 55% of Options C).

6 Although these alternatives provide significantly different income streams, the more important consideration is how much timber revenue is actually applied to forest

6 operations including the demonstration and research program. We strongly support allocating any income generated at Jackson first to the forest's operations, maintenance, road rehabilitation, and research and demonstration projects; and second, to those same needs at other Demonstration State Forests.

7 Jackson Demonstration State Forest is the flagship state forest for California. As such it should be demonstrating the most advanced silvicultural practices, cutting edge research, forward-thinking management for habitat protection, and watershed health. The draft is a step toward making these things a reality on the forest. Again, we commend this effort and offer any assistance we might provide.

Respectfully submitted,

Gary Nakamura on behalf of the Demonstration State Forests Advisory Group
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STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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December, 21 2007

Kathy Bailey, Vice Chair
Demonstration State Forest Advisory Group
PO Box 256
Philo, CA 95466

RE: Responses to the Demonstration State Forest Advisory Group Comments on the Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan Advisory Group

Dear Ms. Bailey:

The Board of Forestry and Fire Protection offers it thanks to you and the members of the Demonstration State Forest Advisory Group for your February 26, 2006 letter of comment on the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. The Board recognizes your service to the Director's Advisory Group and appreciates your interest in helping to improve the Demonstration State Forests Program.

Please note that since your letter, the Board has released a Recirculated Draft Environmental Impact Report (RDEIR) for Alternative G, and provided direction for the development of the Administrative Draft Final Forest Management Plan.

Our responses to your comment letter are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter A-3, a copy of which is attached.

Comment 1

We commend the Board and Department staff. The weaving together of history, academic literature, trend analysis, and scientific research provide a window into JDSF's operations, its challenges, and opportunities. The document is long but interesting and impressive.

Response to Comment 1

The Board appreciates your supportive remarks about the DEIR. The Board and the Department of Forestry and Fire Protection went to great lengths to ensure the completeness of the DEIR and the subsequent 2007 Recirculated DEIR for Alternative G.

Comment 2

An initial list of research topics is presented.

Response to Comment 2

While your comments do not go directly to potential physical impacts on the environment, we appreciate the list of suggested research topics. The Board has determined that the JDSF management plan needs stronger direction regarding the Forests research programs and has provided this direction. Alternative G and the Administrative Draft Final Forest Management Plan for JDSF place a primary emphasis on the management of JDSF for research and demonstration.

Comment 3

A 1980 study of JDSF by Professor John Helms identified an overemphasis on timber management and sales, despite statutory and Board policy direction that demonstration be the primary purpose for the Forest. By elevating the primacy of watershed and ecological process and research and demonstration to that of timber production, this direction can be accomplished. The DEIR provides this direction, but there is a concern with the plan being implemented to achieve these objectives.

Response to Comment 3

There has been a significant shift in the demonstration direction at JDSF since a funding source to support research was implemented in the late 1990s (this funding source has subsequently been substantially reduced due to lack of revenue). In recent years, there has been an emphasis upon research associated with watershed processes, in addition to research associated with both forest growth and stand management. CAL FIRE staff is also focused upon support for research associated with terrestrial and aquatic habitats and the species that they support.

The 2004 Redwood Region Forest Science Symposium provided an opportunity to showcase the research conducted at JDSF. Many of the papers and posters presented at the Symposium were based at least in part on research conducted on JDSF and had a focus other than timber management. These research topics included:

- Riparian zones and microclimate;
- Effects of forest management on fog drip and stream flow;
- Evaporation of rainfall from foliage;
- Role of fire in coast redwood forests;
- Trends in salmon communities;
- Even-aged management and landslide inventory;
- Erosion rates over millennial and decadal time scales;
- The significance of suspended organic sediments;
- Simulation of logging road surface erosion;
- Stand dynamics following tan-oak decline
- Channel incision and suspended sediment delivery;
- Large woody debris and pool dynamics;
- Adaptive management monitoring of spotted owls.

Plan implementation will be monitored through the Monitoring and Adaptive Management approach described in the DEIR and in Chapter 5 of the DFMP and the Administrative Draft

Final Forest Management Plan based on Alternative G. Further, CAL FIRE plans to create a new position at JDSF whose responsibilities will include monitoring for management plan compliance.

The Board is concerned about management direction and, as a part of its oversight responsibilities, will also play a role in ensuring that the Forest Management Plan is implemented in a way that fulfills it objectives.

Comment 4

Timber revenues from JDSF are appropriately expended on research and demonstration activities on all of the state forests. Adequate, certain, and sustained funding is needed.

Response to Comment 4

While your comments do not go directly to potential physical impacts on the environment, the Board agrees. However, the Board does not directly control CAL FIRE's budget, and the department cannot single-handedly redirect timber revenues back into management of the Demonstration State Forests. All State Forest expenditures must be budgeted and appropriated through the standard administrative and legislative processes that apply to all State departments.

The Board has heard in public comment that there is substantial support for funding operation of the Demonstration State Forests from the Forests' timber harvest revenues. As a part of the fiscal year 2006/07 budget cycle, the legislature shifted a number of CAL FIRE program areas—Urban Forestry, Pest Management, Forestry Assistance, Nursery and Seedbank—from State Forest revenue funding (the Forest Resources Improvement Fund) to the General Fund. At this time, only the Demonstration State Forests are funded from Forest revenues.

Also as a part of the budget for the 2006/07 fiscal year, were are approved budget changes that include additional staffing and funding authorization for JDSF and the other Demonstration State Forests. These changes will provide significant additional resources for the management of JDSF, including new staff and substantial funds to address roads. However, this new budget authority cannot be fully implemented unless there are enough harvest revenues flowing into the Forest Resources Improvement Fund for State Forest timber harvests. Achievement of the currently authorized expenditure levels will require resumption of an active timber management program at JDSF.

Comment 5

The different options in the DEIR generate various revenues and have implications to various practices. No option is recommended.

Response to Comment 5

The Board recognizes the implications of State Forest revenues for CAL FIRE programs; please see our response to Comment 4.

Comment 6

We strongly support allocating any income generated at Jackson first to the forest's operations, maintenance, road rehabilitation, and research and demonstration projects; and second, to those same needs at other Demonstration State Forests.

Response to Comment 6

The new State budget actions described under Comment 4 will help to ensure that adequate funding is available for all of the Demonstration State Forests. The department has some flexibility to shift resources, as needed among the several Demonstration State Forests to meet pressing needs on any given Forest.

Comment 7

Jackson Demonstration State Forest is the flagship state forest for California. As such it should be demonstrating the most advanced silvicultural practices, cutting edge research, forward-thinking management for habitat protection, and watershed health. The draft is a step toward making these things a reality on the forest.

Response to Comment 7

The Board concurs. With the additional direction that the Board has now provided (as a part of the Administrative Draft Final Forest Management Plan based on Alternative G) with respect to research, demonstration, and other management plan element, we believe that these goals will be attained.

Thank you for your comments on the JDSF Draft Management Plan and DEIR. We look forward to the implementation of a new management plan on JDSF and to working with the Demonstration State Forest Advisory Group as an important partner in the management of JDSF and the other Demonstration State Forests.

Sincerely,

Stan L. Dixon
Chairman

Attachment
cc: Members of Demonstration State Forest Advisory Group

DEMONSTRATION STATE FOREST ADVISORY GROUP MEMBERS

October 2007

CHAIRMAN
vacant

UC Cooperative Extension
vacant

Small Landowner:
Mr. Steve Staub, RPF
Staub Forestry and Environmental Consulting
Santa Cruz

Large Landowner:
Mike Jani, RPF
Mendocino Redwoods Company
Calpella

Environmental Group and Vice Chairperson:
Kathy Bailey
Sierra Club California
Philo

Socio-Economic:
Marcia McNally
Associate Adjunct Professor
Landscape Architecture
University of California
Berkeley

Forest Ecology:
Joe McBride (UCB), Professor
College of Natural Resources
University of California
Berkeley

Wildlife Biology/Botany:
Don Yasuda
El Dorado National Forest
USDA Forest Service
Placerville

Hydrology:
Matt O'Connor, Ph. D.
O'Conner Environmental, Inc.
Healdsburg

Fisheries:
Jonathon Ambrose
NOAA Fisheries
Santa Rosa

Local Government (2):
Kendall Smith
Mendocino County Board of Supervisors
Ukiah

Dave Finigan
Natural Resources Committee Chairman
Regional Council of Rural Counties
Sacramento

Board of Forestry and Fire Protection Liaison:
George Gentry
Executive Officer
Board of Forestry and Fire Protection
Sacramento

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State of California • The Resources Agency
Arnold Schwarzenegger, *Governor*

DEPARTMENT OF PARKS AND RECREATION
Mendocino District
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Ruth G. Coleman, *Director*

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BOARD OF FORESTRY
AND FIRE PROTECTION

A-4

February 28, 2006

George D. Gentry
Executive Officer
Board of Forestry and Fire Protection
PO Box 944246
Sacramento, CA 94244-2460

Subject: Comments for the Draft Environmental Impact Report, Jackson Demonstration State Forest Management Plan
State Clearinghouse Number: 2004022025

Dear Mr. Gentry:

The California Department of Parks and Recreation (State Parks) welcomes the opportunity to participate in the environmental review process for management of Jackson Demonstration State Forest, one of the most highly valued state forests in the system. Given the magnitude and years of active public and agency participation in this process, State Parks recognizes that the Board of Forestry faces a serious challenge to select a management alternative that fully supports the diversity of values and interests that have been presented. As a neighboring land manager and one of the departments under the Resources Agency, State Parks also welcomes the opportunity to make recommendations that are aimed toward compatible and cooperative management of forested lands in the Mendocino coastal region.

The Mendocino District of State Parks manages four different units under the California State Park System that are adjacent to Jackson Demonstration State Forest (JDSF). On a regional scale, the District manages five additional park units that offer habitat connectivity to the forest ecosystems of JDSF. The park units adjacent to JDSF are: Jug Handle State Reserve, Russian Gulch State Park, Mendocino Woodlands State Park and the Big River unit of Mendocino Headlands State Park. Van Damme State Park, Montgomery Woods State Reserve, Navarro River Redwoods State Park, Hendy Woods State Park, and Maillard Redwoods State Reserve offer regional connectivity to JDSF. Management actions that are being considered and proposed for JDSF have a significant potential to affect resource values that are managed and protected by State Parks. The Department of Parks and Recreation submitted written comments on the initial Draft Environmental Impact Report (DEIR) for the JDSF Management Plan in 2002. State Parks also submitted scoping comments in March, 2004 for this second and current DEIR for the JDSF Management Plan. 1

Four of the alternatives proposed in the JDSF DEIR (Alternatives D, E, and F), offer important elements that are most compatible with State Park values and address a number of the issues raised by State Parks in the March, 2004 scoping comments. Alternatives D, E, and F propose more ecological approaches to timber management, emphasize scientific research monitoring, and compatible recreational use of Jackson Demonstration State Forest. Alternatives D and F, in particular, emphasize the need for a citizen's advisory committee, and an interagency technical advisory committee. Recently, the Mendocino County Board of Supervisors and the Fort Bragg City Council adopted resolutions to support Alternative D. 2

More specifically, State Parks offers the following comments for consideration by the Board of Forestry on the Jackson Demonstration State Forest DEIR:

1. The most critical concern regarding forest management in the redwood region, especially Mendocino County, is the loss of mature (80-100 year old), late successional and old growth forest habitat, and the resultant degradation of forest ecosystem health. The DEIR (Page VII.6.6-25) quantifies the loss of conifers in the redwood region between 1994 and 1998 by stating: "The redwood type exhibits the largest area of canopy cover decrease, affecting 54,466 acres (5.1%), with over 34,000 of those acres verified to be harvest. Unlike counties to the north, areas set aside as parks in Mendocino County for the purpose of forest ecosystem protection are relatively small and fragmented. Protection and restoration of habitat values for sensitive species that are dependant upon mature forest ecosystems cannot be achieved within the existing park units alone. For the most part, forested State Park lands in Mendocino County are surrounded by industrial timberland. Jackson Demonstration State Forest, with nearly 50,000 acres of forested land that is connected to several State Park units, provides a critical opportunity for management that could lead to the recovery of the forest ecosystems in the redwood region. 3

2. State Parks believes that the Board of Forestry and the California Department of Forestry and Fire Protection (CDF) have an exciting opportunity to embrace a model for collaborative planning and management that involves interagency cooperation and public participation. We greatly support the concept of managing JDSF under the guidance of a citizen's advisory committee that includes environmental organizations, and an interagency technical advisory committee that includes participation from state and federal resource agencies, including State Parks. Alternatives D and F include provisions for establishing these committees. Through a process of information exchange and collaboration within the framework of a technical advisory committee, examples of issues that could be addressed include: 1) watershed impacts to parkland resulting from upstream logging practices; 2) the management of recreational trail connections between parkland and JDSF; and 3) the identification, protection, and management of wildlife corridors between parkland and JDSF. 4

3. State Parks appreciates the difficulty and expense in collecting and scientifically analyzing site-specific data for environmental management decisions. The JDSF DEIR, utilizing a programmatic EIR approach, has relied heavily on existing models and landscape scale mapping for developing conclusions and predictions regarding the various proposed alternatives. State Parks cautions that generalized models 5

such as California Wildlife Habitat Relationship (CWHR) can lead to serious errors when used for species-specific predictions. Page VII.6.6-3 of the DEIR discusses limitations of this modeling approach, especially for forest stands composed of large sized trees with small or pole sized trees in the understory (CWHR 6). However, the DEIR has included species-specific tables that make predictions regarding changes in species abundance based on CWHR. Experience and observations on State Park lands would suggest that at least some of these predictions are widely incorrect. For example, Table VII.6.6.29 *Percent change in habitat capability for species occurring in Jackson Demonstration State Forest for two time periods: Present to 2030 and 2030 to 2060. Alternative E* shows a substantial increase (from -1.3 to 7.8) in habitat capability for wild pigs. This result is confusing, since Alternative E has a late seral forest management emphasis and wild pigs (introduced non-native species) are found more often in early successional forests and open woodland or grassland habitats within the parklands of Sonoma and Mendocino Counties. 5

4. State Parks fully supports the concept of JDSF being managed and utilized for research purposes. Page II-5 of the DEIR lists the actions to be taken on JDSF in accordance with the Board of Forestry's wish to "emphasize and expand demonstrational, experimental, and educational activities on the State forests." In addition, State Parks recommends that JDSF demonstrate active management as a tool to improve forest ecosystem health. There is an increasing need for land managers and agency representatives to understand methodologies that may benefit the development of late seral forest characteristics. Unlike State Parks, JDSF is in a position to utilize profits from timber harvest to facilitate such research. The research focus on JDSF should be, by no means, limited to the demonstration of different silvicultural techniques, nor limited to the maximization of forest economics. State Parks supports research on JDSF that would include: 6

a) The study of management practices to prevent the invasion of non-native invasive weeds and restore native habitats once the weeds are established would benefit both private and public forest land managers. Timber management practices should be investigated that reduce the disruption of native ecosystems so that the invasion of non-native species that thrive in disturbed environments is not facilitated following timber harvest. On Page VII.6.2-21, the DEIR states, "JDSF proposes a cooperative with local, state, and federal agencies, forest landowners, and private and public organizations to develop weed management strategies." This past year, a Mendocino Coast Weed Management Area was initiated with support from State Parks. A JDSF representative has been a welcome participant, and through this cooperative process we look forward to advancements in weed control on JDSF, parkland, County, and private properties. 6a

b) A research program on JDSF that is directed toward monitoring and perfecting watershed restoration techniques on managed forest lands would greatly benefit private and public landowners that are responsible for complying with water quality regulations in relation to the TMDL process. CDF provided funding toward and participated in the North Coast Watershed Assessment Program. Watershed assessments for the Noyo and Big Rivers have been 6b

completed and information gained from this program could be utilized to begin focused restoration research projects within JDSF. 6b

c) Research involving site-specific data collection and analysis is needed to refine the models, including CWHR that are commonly used to characterize habitat values. Management decisions should be revisited regularly and revised based on scientific data, with oversight provided by a technical advisory committee, which includes university forest advisors, researchers, and representatives from the U.S. Forest Service experimental stations. 6c

d) As proposed for Alternative D, JDSF should increase staffing to include biologists (Page VI – 34). A multi-agency technical advisory committee, as recommended in Alternative F (Page VI – 13), would be a valuable asset for the review of research proposals to ensure consistency with overall management goals and specific habitat concerns. 6d

5. Page VII.14-14 describes the popular Jug Handle State Reserve 2.5-mile nature trail (the "Ecological Staircase Trail") that explores the unique coastal terraces of the Mendocino coast. The upper loop of the trail culminates in a boardwalk constructed by State Parks on a portion of pygmy forest habitat that is jointly managed under a memorandum of understanding between CDF and State Parks. Unfortunately, vandalism, illegal dumping and other land abuse is prevalent throughout much of the pygmy forest area, both on JDSF and within Jug Handle State Reserve. State Parks is currently working with the Mendocino Coast Chapter of the Audubon Society to cleanup and protect the Jug Handle pygmy forest. State Parks welcomes the opportunity to continue collaborative efforts with CDF to develop an effective program for pygmy forest management and protection that also addresses the vandalism and land abuse problems. 7

6. State Parks supports the concept of a Marbled Murrelet Recovery Demonstration Area as shown on Map Figure AA, Special Allocation Plan for Alternative F. Murrelet surveys within Russian Gulch State Park continue to reveal breeding behavior detections. Additional surveys conducted under contract for State Parks by Mad River Biologists in 2005 detected murrelets during the breeding season on the newly acquired Big River property. These new detections indicate a need for more extensive surveys in the Mendocino coastal forests, and the need for greater understanding of regional habitat connectivity to sustain murrelet populations in Mendocino County. Due to the extreme rarity of marbled murrelet habitat in Mendocino County, State Parks, the California Department of Fish and Game, the United States Fish and Wildlife Service, and respected murrelet consultants consider the Big River and Russian Gulch detections to be highly significant. 8

7. Pages VI-6 to VI-7 of the DEIR address the potential transfer of management of the Mendocino Woodlands Special Treatment Area to the California Department of Parks and Recreation. It should be noted that the conclusion reached in that discussion ("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") is questionable given the largely different missions of State Parks and 9

CDF. Resource management directives and policies for State Park lands emphasize the protection and restoration of native ecosystems and natural processes. Forest management as conducted by CDF does not occur within parklands. The provision of high quality recreational use that is compatible with natural and cultural values is a primary objective of State Parks. 9

The comments presented for the DEIR are by no means exhaustive. We have focused attention on subjects that most directly affect State Parks, and will defer to the other agency and public reviewers in the areas of their expertise. If you have any questions regarding these comments, please contact Renée Pasquinelli, State Park Senior Environmental Scientist at (707) 937-5721. Thank you for the opportunity to provide comments for the Draft Environmental Impact Report for the Jackson Demonstration State Forest Management Plan.

Respectfully,

Kirk Marshall
Acting Superintendent, Mendocino District

cc: Lynn Rhodes, Northern Division Chief, Department of Parks and Recreation
Rick Rayburn, Natural Resources Division Chief, Department of Parks and Recreation
Marc Jameson, Forest Manager, Department of Forestry and Fire Protection

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

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December 21, 2007

Marilyn Murphy
District Superintendent
Mendocino District
California Department of Parks and Recreation
P.O. Box 440
Mendocino, CA 95460

RE: Responses to Department of Parks and Recreation Comments on the Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan

Dear Ms. Murphy:

Thank you the Department of Parks and Recreation's February 28, 2006 comments on the Jackson Demonstration State Forest (JDSF) Draft Environmental Impact Report (DEIR). Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter A-4, a copy of which is attached. Where our response to your comments indicates a change to the DEIR or the Draft Forest Management Plan, the change is indicated in **boldface type**. Please note that since the submission of these comments, the Board has released the Recirculated Draft Environmental Impact Report (RDEIR) for Alternative and the Board has provided direction for the preparation of an Administrative Draft Final Forest Management Plan.

Response to Comment 1

The DEIR, DFMP, and the proposed Administrative Draft Final Forest Management Plan recognize the important State Park resource values relevant to the management of JDSF. The DFMP includes a number of measures to protect the values on the Park lands immediately adjacent to JDSF, such as the State Park Special Treatment Areas (267 acres) and the Woodlands Special Treatment Area (2,511 acres). Impact analysis in the DEIR specifically considers such potential effects. The Administrative Draft Final Forest Management Plan, and Alternative G, on which it is based, also include a 1,549-acre area in Russian Gulch/Lower Big River for the development of late seral forest conditions to provide Marbled Murrelet habitat.

Response to Comment 2

Comment noted. As compared to Alternative C1, Alternative G and the proposed Administrative Draft Final Forest Management Plan place greater emphasis on research and demonstration and include more ecological approaches to management, such as the 6,803- acre Older Forest Structure Zone that weaves together most of the Forest's old growth groves with areas designated for the development of late seral and older forest conditions. As noted in the

response to comment 1, these proposals also provide a substantial additional area for Marbled Murrelet habitat recruitment. Alternative G and the Administrative Draft Final Forest Management Plan provide direction regarding roles for a JDSF advisory group. The Board and the Department of Forestry and Fire Protection will collaborate closely on the establishment of a new advisory body for JDSF.

Response to Comment 3

The DEIR (Page VII.6.6-25) does not quantify the “loss” of conifers as described in the comment. Rather, it describes a detectable change in level of canopy cover and attributes the majority of those acres to timber harvest activities. Change detection as a methodology for the identification of alteration of forest ecosystems is not able to ascertain change in structural attributes of the forest stand beyond canopy closure. It is incorrect to assume that change in canopy cover equates to loss or gain of redwood forest of a particular age or size class. The measure is included in the discussion of Regional Setting to provide the reader with an overview of extent of management activity within the redwood region.

The DFMP and DEIR recognize the interrelationships between State Park units and JDSF and the importance of mature forest types. For example, the management proposed in the DFMP calls for the majority of the Woodlands Special Treatment area, which is adjacent to Mendocino Woodlands State Park and the Big River Unit of Mendocino Headlands State Park, to be managed for the development of late seral forest. Alternative G and the Administrative Draft Final Forest Management Plan also call for similar management adjacent to Russian Gulch State Park. The response to comment 2 describes the Older Forest Structure Zone component of Alternative G and the Administrative Draft Final Forest Management Plan. Overall, these approaches call for management of over one-third of JDSF for older forest characteristics.

It also bears noting that the Conservation Foundation recently acquired 11,600 acres along Big River, north and east (upstream) of the Big River Unit of Mendocino Headlands State Park. Assuming that the Conservation Fund plans to manage these lands similar to their Garcia River tract, they will be managing to provide a high level of forest restoration and conservation. Taken together, JDSF, the Department of Parks and Recreation, and the Conservation Fund will be managing over 70,000 relatively contiguous acres according to high standards for forest conservation and recovery. This situation provides an exciting opportunity for the three landowners to come together and talk about how they can best work together to forward these values across their large landscape.

It also bears noting that the DFMP, Alternative G, and the proposed Administrative Draft Final Forest Management Plan also propose to protect all identified old growth stands and most remaining individual old growth trees on JDSF. They propose establishing approximately 700 acres of late seral forest buffers around three of the old-growth forest groves on JDSF and propose to develop late seral forest in the riparian areas along all Class I and II streams. These stream-based late seral areas will provide connectivity with the State Park units adjacent to JDSF.

Response to Comment 4

The Board recognizes the value of collaboration with neighboring ownerships and public participation to enhance resource management for a range of values and uses. For example, CAL FIRE staff and DPR staff communicate on a regular basis concerning matters of mutual

importance in the local area, including road conditions, security, and protection of other resources. Our two staffs also communicate and confer about safety issues, such as access to and from the Mendocino Woodlands area, and in the event of fire or other emergency. CAL FIRE participates in many improvement projects within the local state park system by sending and supervising crews from the conservation camps to conduct local work projects. Our response to comment 3 has already noted a new opportunity for collaboration across a 70,000-acre plus landscape.

CAL FIRE has established the Demonstration State Forest Advisory Group to provide the department with guidance on the management of the Demonstration State Forests. The Group, through a mix of academic, scientist, professional, environmental group, and local government representation, provides balanced guidance to the planning for and management of the state forests. Representation on the Advisory Group that is local to JDSF includes Mendocino County Supervisor Kendall Smith, Sierra Club forestry representative Kathy Bailey (Vice-Chair of the Advisory Group), and Mendocino Redwood Company Resource Manager Mike Jani.

Through its policy setting role, through its review of Demonstration State Forest management plans every five years, and through its role in approving new or revised management plans, the Board of Forestry and Fire Protection also provides substantial management direction to JDSF. The Board's policy processes provide substantial public opportunity for input on the management of JDSF. More locally, the Mendocino County Forest Council also has been a source of input to the managers of JDSF, the department, and the Board.

As noted above, the Board and CAL FIRE will be collaborating closely on the establishment of a new advisory body for JDSF.

Response to Comment 5

The limitations, benefits, and assumptions inherent in a variety of wildlife habitat relationship modeling tools were considered prior to their application to DEIR alternative analysis. The California Wildlife Habitat Relationships System, developed by the California Interagency Wildlife Task Group (CIWTG), and administered by the Department of Fish and Game was judged to be the best modeling system available to examine trends in habitat capability for as many terrestrial vertebrates as were likely to occur within the project area. The basic assumptions and limitations of the habitat capability modeling effort are described in detail on DEIR pages VII.6.6-131 through -134.

The CWHR System includes a process for species-specific model change and validation as the need for alteration is discovered by users. Data held by DPR that supports the contention that "some of these predictions are widely incorrect" should be shared with the CIWTG (DPR is a member of the CIWTG) so that model predictions can be adjusted where deemed necessary. The cautions offered by the Department of Parks and Recreation are noted. Also noted however, is the fact that no feasible alternative modeling approach is offered.

It is correct that Alternative E (late-seral emphasis) shows an increase in wild pig habitat capability for the 2030-2060 time period. This result is explained (DEIR Page VII 6.6-206) by an increase in acreage of large tree size classes of Montane Hardwood Conifer and associated mast production (used as forage) and representation of acreage considered of low value where none existed previously in the Current to 2030 period.

Since the DEIR is programmatic, additional wildlife and wildlife habitat assessments will be conducted at the project level of those projects that have the potential to significantly alter habitat. Timber harvesting plans (THPs) are the most typical example of such projects for JDSF. While THPs will be tiered to the Final EIR, all THPs will require site-specific analysis of wildlife habitat impacts and further cumulative effects analysis beyond that contained in the FEIR.

Response to Comment 6

Alternative G and the proposed Administrative Draft Final Forest Management Plan both provide a research-driven mission for JDSF. The research focus of JDSF, both historically and as anticipated for the future in the DFMP, Alternative G or the proposed Administrative Draft Final Forest Management Plan, ranges far beyond the demonstration of silvicultural techniques and the maximization of forest economics (see Chapter 4 and Appendix III in the latter document). The websites http://www.demoforests.net/publications.htm and http://www.fs.fed.us/psw/topics/water/caspar/ provide a clear demonstration of this range. Further, consider the wide range of research conducted at JDSF that has been presented at the periodic Redwood Region Forest Science Symposia organized by the University of California, Berkeley. The proceedings of the 2004 Symposium were recently published by the USDA Forest Service Pacific Southwest Experiment Station (available on-line at http://www.fs.fed.us/psw/publications/documents/psw_gtr194/).

Some immediate examples of research not directly related to silviculture and maximization of forest economics include:

- habitat use and home range of northern spotted owls;
- incorporation and monitoring of large woody debris to aid in the restoration of aquatic habitat;
- the relationship between forest canopy and precipitation;
- relationship between stream channel and riparian zone characteristics to water temperature;
- the relationships between forest management and watershed processes.

The DEIR alternatives identify a number of areas where late-seral forest conditions are the management objective. These include Special Concern Areas with a wildlife emphasis, WLPZs, old-growth grove augmentation areas, and certain areas to be managed for the recruitment of Marbled Murrelet habitat in collaboration with other wildlife agencies and interested parties. Alternative G and the proposed Administrative Draft Final Forest Management Plan also provide for an extensive Older Forest Structure Zone.

The proposed research focus on JDSF is not limited to the demonstration of different silvicultural techniques or the maximization of forest economics. DEIR pages II-5 to -6, Section 3.2 Demonstrations and Experiments, provides an overview of the kind of projects that could be carried out on JDSF.

JDSF is not in a position to simply “utilize profits from timber harvest to facilitate… research.” CAL FIRE is subject to the same budgetary processes as the Department of Parks and Recreation. All budget items must be authorized through the standard State administrative and legislative budgetary processes.

Response to Comment 6(a) The Integrated Weed Management Program presented in the DFMP (pages 58-59) and discussed in the DEIR (pages VII.6.2-19 to -21) indicates the intent to thoroughly address invasive species on JDSF. CAL FIRE is now a signatory to the agreement for the Mendocino Coast Weed Management Area. The DEIR also provides an additional management measure related to invasive species (see pages VII.6.2-45 to -46). Alternative G and the proposed Administrative Draft Final Forest Management Plan also incorporate these elements.

Response to Comment 6(b) Comment on suggested research direction noted.

Response to Comment 6(c) The Board agrees with this comment. All models that are utilized to aid in management decisions should be based upon good science. When specific local research indicates that conditions may vary from those predicted by models, the more specific local information takes precedence. The Department generally seeks the advice and counsel of a wide variety of technical experts during the planning of individual projects. CAL FIRE works closely with the staff of the USFS Pacific Southwest Research and Experiment Station, and often consults with the Department of Fish and Game and the US Fish and Wildlife Service. The State Forest also seeks the advice of the Demonstration State Forest Advisory Committee. As noted previously, the Board and CAL FIRE are working to establish a new JDSF advisory body.

Response to Commend 6(d) JDSF was able to add a wildlife biologist to its staff in the 2006/07 fiscal year. CAL FIRE will seek the addition of a fisheries biologist to the staff, once adequate funds become available. Comment noted regarding a technical advisory committee: see response to comment 6(c).

Response to Comment 7

Comment noted. CAL FIRE also looks forward to continued collaboration with DPR regarding pygmy forest management and protection from vandalism and other forms of land abuse. The Department has indicated that it is hopeful that budget and staffing augmentations will allow JDSF to better patrol areas and address vandalism and dumping problems.

Response to Comment 8

Murrelet detections in 2005 in the Big River property of DPR are encouraging. JDSF is actively contributing to the statewide database of Marbled Murrelet survey effort. Individual project surveys are regularly completed and the data shared with others.

Alternative G and the proposed Administrative Draft Final Forest Management Plan both include a 1,549-acre Marbled Murrelet habitat recruitment area adjacent to Russian Gulch State Park. This designation would protect almost the entirety of the area designated for Marbled Murrelet Recovery Demonstration under Alternative F.

The DEIR proposes an Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat that would provide a collaborative planning and analysis process to identify the areas of JDSF that can best contribute to recovery of the Marbled Murrelet. This management measure is included in Alternative G and the proposed Administrative Draft Final Forest Management Plan.

Response to Comment 9

The paragraph on DEIR Page VI-7 and beginning "Given this policy conflict…" will be edited to state: "Given this policy conflict, and because recreational users of JDSF and the Mendocino Woodlands would have similar experiences (e.g. CAL FIRE management for late-seral conditions and absence of even-aged management within the Mendocino Woodlands Special Treatment Area is more similar to DPR management for natural and cultural values than on many other areas of JDSF), this alternative has been eliminated from further consideration. JDSF as a working forest operates under a variety of land treatment objectives, a subset of which approach those under which the DPR routinely operates."

Thank you for your comments on the JDSF Draft Management Plan and DEIR. We look forward to the implementation of a new management plan on JDSF and to working with the Department of Parks and Recreation as an important partner in the protection and enhancement of natural and cultural resources, and associated recreational and educational opportunities.

Sincerely,

Stan L. Dixon
Chairman

Attachment

State of California

Memorandum

A-5

Date: March 1, 2006

RECEIVED BY
MAR 1 - 2006
BOARD OF FORESTRY
AND FIRE PROTECTION

To: Stan L. Dixon, Chair
Board of Forestry and Fire Protection
1416 9th St., Room 1506-14
Sacramento, CA 95814

From : Banky E. Curtis
Deputy Director
Habitat Conservation Division
Department of Fish and Game

Subject: Department of Fish and Game's Comments on the Jackson Demonstration State Forest's Draft Environmental Impact Report

Attached is the Department of Fish and Game's (DFG) comments on the Jackson Demonstration State Forest's (JDSF) Draft Environmental Impact Report (DEIR). DFG appreciates the opportunity to review the DEIR and provide comments.

For questions or comments, please contact Mr. Marty Berbach, Staff Environmental Scientist, at (916) 327-8839; Mr. Richard Macedo, Senior Environmental Scientist, at (707) 928-4369; or Ms. Clare Golec, Environmental Scientist, at (707) 964-1597.

Attachment

cc: Marc Jameson
Jackson Demonstration State Forest
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Leslie Markham
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California Department of Fish and Game Comments on the
Draft Environmental Impact Report for Proposed JDSF Management Plan

The California Department of Fish and Game (DFG) appreciates the opportunity to comment on the Jackson Demonstration State Forest (JDSF) draft Environmental Impact Report (DEIR). DFG's review of the JDSF DEIR has been focused within its jurisdiction over the conservation, protection, and management of wildlife, native plants, and habitat necessary to maintain biologically sustainable populations (Section 1802, Fish and Game Code). In addition, DFG, as trustee agency under California Environmental Quality Act (CEQA) Section 14 California Code of Regulations (14 CCR) 15386, CEQA Guidelines), provides expertise to review and comment upon environmental documents and makes recommendations regarding potential negative impacts to those resources held in trust for the people of California.

DFG's review was restricted to the DEIR, and not of the Draft Forest Management Plan (DFMP). We understand the DFMP's intent is to provide programmatic guidance to California Department of Forestry and Fire Protection (CDF) in the management of the Forest, and subsequent to the DEIR, will need to be updated and finalized. Further, we recognize more site-specific assessment of impacts and mitigation for sensitive[1] species will need to be provided in timber harvesting plans (THPs), and reviewed by the public and trustee agencies.

A

B Overall the biological resource discussions in the DEIR were informative; however, portions were unclear, incomplete, and/or not fully integrated with the DFMP.

C The DEIR's analyses regarding potential species impacts are generalized with many species analyses based on various models such as California Wildlife-Habitat Relationships (CWHR). While useful, models are not always sufficient for accurately assessing potential impacts as they relate to the habitat, species and proposed

D management disclosed in the DEIR. This highlights the need to expand the understanding of the biological resources on JDSF. Lastly, DFG noted that many literature citations in the text were not included in the references cited section, a number

E of citations were apparently miss-cited, and some pertinent literature appears to have been overlooked.

DFG comments are presented below and summarized by pertinent section, biological resource, and page number. For questions regarding these comments, please contact Mr. Marty Berbach, Staff Environmental Scientist, at (916) 327-8839, or Ms. Clare Golec, Environmental Scientist, at (707) 964-1597.

[1] Sensitive species include those species listed as endangered, threatened or rare (Section 670.2, 14 CCR; Section 1900, Fish and Game Code; ESA Section 17.11, Title 50, Code of Federal Regulations), or those meeting the definitions of rare or endangered provided in Section 15380 of the CEQA Guidelines.

Part V. Environmental Setting

1 • Page V-4: Other contributing economical pressures for commercial timber management are lower timber volume on the landscape (past harvest practices and younger stands), higher costs of doing business (such as wages, construction and gas prices), and international market competition.

Part VI. Alternatives

2 • Pages VI-35 through 37, Table VI.1 Comparison of Management Approach and Elements Among Proposed Alternatives: Alternatives A, B, and D do not appear to propose the protection and recruitment of sufficiently large blocks of appropriately-placed, late successional forest habitat that would benefit marbled murrelets. These alternatives do not appear consistent with the designation of JDSF as marbled murrelet critical habitat (U. S. Fish and Wildlife Service 1996), nor the recovery objectives and goals of the Marbled Murrelet Recovery Plan (U. S. Fish and Wildlife Service 1997).

3 • Page VI-39, Table VI.1 Comparison of Management Approach and Elements Among Proposed Alternatives: Differences regarding rare plant surveys and species considerations under Alternatives B through E are unclear given the standard CEQA considerations would include all listed measures, including Alterative C1. The distinct differences appear to be the addition of Integrated Pest Management under Alterative C1 and some level (as funding permits) of forest-wide floristic surveys under Alterative F. The Alternatives offer very little management considerations for sensitive plants and, with the exception of Alterative F, none appear to provide for any floristic surveys. This is crucial for ensuring the adequacy of sensitive plant surveys and for developing a sound understanding of the forest flora. Given JSDF's high quality and volume of timber relative to other managed redwood forestlands, DFG recommends that consideration be given to re-directing timber revenues back into the Forest for purposes of providing adequate and consistent funding for the management of roads, recreation, forestry and biological resources.

4 • Page VI-53, Table VI.1 Comparison of Management Approach and Elements Among Proposed Alternatives: It is unclear how Alterative B and C1 will differ in management approaches for wetlands. Alternative B cites FPRs and Alternative C1 cites FPRs with "protection of wetland site and integrity and hydrological function". However, the wetland section of the DEIR does not clarify other management approaches beyond standard FPR's WLPZ protections measures.

Part VII. Resource Specific Analysis

Part VII.6.1, Aquatic Resources

- Page VII.6.1-5: Where stated that, "*...streams in JDSF are primarily confined and therefore generally lack off-channel habitats such as side channels and floodplains that would otherwise provide high-quality overwintering habitat for juvenile coho salmon.*" DFG considers flood prone areas that support wetland indicators including mud-lined trees, sand and silt deposits or presence of hydrophytes such as common scouring rush (*Equisetum hyemale* ssp. *affine*) as frequently inundated floodplains and the minimum extent of the riparian zone. Protecting and enhancing riparian buffer zones to protect coho salmon is one of the Noyo River watershed recommendations in the coho salmon recovery strategy (California Department of Fish and Game, 2004). However, a potential contradiction exists regarding the Watercourse or Lake Protection Line (WLTL) and Channel Zone definitions in the California Forest Practice Rules (FPR), which typically leads one to apply the WLTL (the inner boundary of a
5 Watercourse or Lake Protection Zone [WLPZ]) adjacent to the active stream channels and streamward of floodplains[2]; based on delineating the WLTL at the streamside prevalence of 25-year old conifers and hardwoods. These trees typically persist near the active channel, thus, transitioning a watercourse margin here typically separates the active channel from its floodplain (the two are therefore, protected differently). The current FPRs do not necessarily recognize or support recent science-based treatments that suggest combining the active channel and floodplain into a single feature known as the channel zone (Ligon. et al., 1999) or that the separation of the two may result in loss of riparian corridors (and WLPZs placed thereon) from lateral channel migration described in Naiman, et al., 1992; Rapp, et al. 2003; Keller and Swanson, 1979, and noted on DEIR pages VII.6.1-5 and 6. The final EIR should detail how flood prone areas (i.e., the 20-year return interval floodplains) will be identified and managed in the Forest and how will proposed management compliment the goals of coho recovery, insofar as recovering properly functioning riparian microclimate, shade and large woody debris recruitment to streams, and the intent of the FPRs to maintain, protect and restore riparian zones (14 CCR § 916)?

- Page VII.6.1-10: According to Benda and others (2002) and Benda and Associates [2004 (a, b)], low gradient channels with floodplains, bank erosion and tree mortality are usually more important than landslide features as a wood recruitment mechanism. It should be noted that these studies were based on
6 chronic wood input modeling (such as delivery from tree mortality, longevity of wood in the channel, distance and direction of tree fall, and wind-throw or gradual undercutting of root systems) and assumed that most large woody debris (LWD) originates from a set distance from the channel; such as the 90% wood recruitment originating from within 33 feet of the bank in Benda's second growth

[2] The level area near a river channel, constructed by the river in the present climate and overflowed during moderate flow events (Leopold, 1994).

study sites. Subsequently, these studies did not consider the fact that a majority of wood input and output tends to be episodic (i.e., delivery from windstorms, floods, fires or landslides) and not constant or chronic. Episodic wood input has been shown to account for most of the tree fall and wood delivery in streams (Naiman, et al. 2000). This may explain why the volume of wood with sources that could be identified in Benda (2002) was low (mean 27%) in the old growth study segments. It is, therefore, important to explain that wood recruitment distances vary tremendously on spatial (e.g. hill slopes vs. active floodplain sources) and temporal scales (e.g. time to grow mature [300-400 years old] redwoods vs. young second growth (60-80 years old) in the riparian zone.) Moreover, management guidelines that are predicated on these types of models (especially if data is collected from small streams absent active floodplains) for set distances of wood recruitment will likely result in underestimating riparian zone protection required to provide long-term instream wood for medium to large streams. Thus, these guidelines may not sufficiently support the intent of the Forest Practice Rules to maintain, protect or recover riparian zones depending on their conditions. DFG recommends establishing the WLTL at the outer boundary of a watercourse's 20-year return interval event floodplain to avoid losing instream large woody debris or recruitment potential, where lack of this value is a primarily limiting factor. The area between the WLTL should then be defined as the channel zone where timber harvesting would be directed to improve salmonid habitat through the limited use of the selection or commercial thinning silvicultural methods with review and comment by DFG. Alternatives C1 and C2 propose compliance with the FPRs plus additional equipment limitations and no-cut zones for Class I and Class II watercourses (according to DEIR pages VI-29 and 31). It appears that Alternatives D-F with their Riparian Management Zones will provide the best protection for watercourses and floodplains insofar as minimizing impacts to large wood recruitment because it provides guarantees that late seral habitat will be developed in the riparian zones and will compensate for the FPR's separation of the active channel from floodplains with FEMAT-based watercourse buffer widths.

6

- Page VII.6.1-11: Where stated, *"However, reduced levels of detrital input into streams attributable to streamside timber harvesting is somewhat offset by concomitant increases in detritus production within stream channels (primarily dead algae and other aquatic plant debris)…"*, is there a specific reference for this comment because first order streams (such as Class III watercourses) contain little algae and aquatic plants present to offset reduced detrital levels from streamside timber harvests (Clare Golec, Botanist with DFG, pers. comms February 2006); therefore, detritus production in headwater streams is primarily dependent on riparian vegetation and emergent wetland plants. FPRs do not require post harvest overstory canopy retention for Class III watercourses, unlike Class I and Class II watercourses that also receive large woody debris protection measures. Yet, because of their dentritic pattern in typical watersheds, Class IIIs often comprise a large proportion of the stream network and are therefore considered important for maintaining ecosystem integrity (Sheridan, 2003).

7

Since Alternatives C1 and C2 propose compliance with the FPRs plus additional equipment limitations regarding Class III watercourses (according to DEIR pages VI-32 and 33), it appears that Alternatives D-F with their Riparian Management Zones provide the best protection for Class III watercourses insofar as minimizing the rate of nutrient removal from headwater streams, the products of which indirectly benefit coho, tailed frog, southern torrent salamanders, etc.

- Page VII.6.1-14: The DEIR cites the study by CH_2M-Hill and Western Watershed Analysts (1999), which reported that nearly 80% of cumulative riparian shade effectiveness is reached within approximately 0.5 site-potential tree heights vs. the generalized curve presented by FEMAT (1993), which suggests that cumulative effectiveness for shading approaches 100% at a distance of, approximately, 1.0 tree height from the stream channel. Why are two different percentages compared, such as 80% for the Steinblums and others 1984 (ACD) curve vs. 100% for the FEMAT curve? The Riparian Shade Effectiveness "FEMAT" Curve reaches 100% at 1.0 tree height and the Steinblums and others 1984 (ACD) curve is not much lower at, approximately, 95% at 1.0 tree height. Additionally, why is 80% cumulative riparian shade effectiveness chosen as a curve comparison point as opposed to 100% if the point is not to further impair, but instead, restore impaired watercourses and riparian zones? Alternatives D-F with their Riparian Management Zones appear best suited to provide adequate shade to stream because the RMZs provide better guarantees for late seral habitat development in the riparian zones, which is critical to coho recovery (California Department of Fish and Game, 2004), while more effectively avoiding substantial effects on any portion of riparian habitats by utilizing the FEMAT-based watercourse buffer widths.

8

- Page VII.6.1-15: The DEIR cites the James (2003) study of streamside microclimate and stream temperature in the Sierra Nevada region, which revealed that clearcuts had no discernable impact on microclimate within 40 feet of the stream bank. This example is possibly misleading when it's compared to coastal watersheds, where streams do not receive water temperature-ameliorating effects such as snow pack and associated cold water run-off in the Sierras. A caveat should be added to the James 2003 study discussion to inform the reader about how such narrow stream buffers might be appropriate in the Sierra setting, but might not be appropriate in the coastal watershed setting (see Ledwith,1996, which is perhaps a more appropriate microclimate setting comparison). For JDSF, it is likely that water temperature-ameliorating effects are more effectively achieved by tall-tree shade, which approaches 100% at one site potential tree height according Steinblums and others, 1984. One site potential tree height (the expected height of coniferous trees upon maturity at 200 years) on a high-site coastal California redwood forest is, approximately, 165-220 feet when utilizing mature redwood trees as opposed to young growth (50-60 year old) redwoods, resulting in a buffer that's at least four times wider than the James 2003 buffer width results.

9

- Page VII.6.1-20: Where stated that "*Incised channels, even where the stream is not confined within the valley bottom, have little or no connectivity between channels and floodplains, and typically provide very little off-channel or side-channel habitat capable of providing low-velocity refuge during high flow events.*" It is further stated that, *"Confined channels make up 97 percent (184 mi or 296 km) of the classified Class I stream length in the JDSF Proper assessment area."* This implies that most Class I streams in the JDSF either don't have floodplain connectivity and, where they do, they're of little aquatic habitat importance. Regarding connectivity, the flood of December 31, 2005 was an, approximately, 10-year return interval (RI) flood event (i.e., frequent flood compared to Noyo River gaging station's history of peak flows) and evidence of floodplain connectivity and landward extent (as much as 100 feet) on the SF Noyo is obvious (sand, silt and debris deposits) near the confluence with the Noyo River. Big River's floodplains (near the Two Log Creek confluence) were under floodwaters for approximately 20 hours according to the nearby USGS gaging station (estimated to have been a 20-year flood RI based on its location between Caspar Creek [8-12 year RI], and the Navarro, [approximately 20-year RI]). Did the Stillwater Sciences 1997 assessment utilize gaging station data to estimate the approximate stage-height of a 20-year flood RI as part of their field verification of channel confinement and floodplain connectivity estimates? DFG considers the 20-year RI floodplain and the active channel as the most biologically critical area, based on coho salmon life cycle requirements (CDF 2005) and the minimum extent of channel zone habitat necessary for protection, maintenance and recovery of coho populations in the North and Central Coast regions. Splash damming is mentioned in the DEIR as a causal factor in channel incision and should be acknowledged along with the Stillwater Sciences reference that, in part, the lack of connectivity is most likely artificial. However, stream channel and riparian zone recovery will likely result in these floodplains becoming more temporally and spatially connected. A re-assessment of channel confinement, following the recent flood, will likely reveal much greater floodplain connectivity with Class I active channels than is suggested in the DEIR.

10

- Page VII.6.1-22: Figure VII.6.1.2, Sediment in Pools (V*) at Noyo River and Nearby Stream Sites (1992), appears to be missing sampled stream names on the ordinate, for example, between Kass and Parlin Creeks.

11

- Page VII.6.1-38: Repetitive references to past stream clearing by DFG (e.g., under the heading of *"Big River watershed-Mendocino Redwood Company-Stream Habitat Assessment"* and particularly the last paragraphs on pages VII.6.1-46 and 1-84) should be explained in more context including logging history, which necessitated the clearings in the first place (there is some mention of this for Caspar Creek on page VII.6.1-35.) In the past, logging-related debris jams were deliberately caused by pushing wood debris into streams for crossings and streamside landings. As mentioned in the DEIR, splash dams were also built (circa 1860s-1930s) in some watersheds such as Big River and Caspar Creek to drive logs downstream. By design, splash dams blocked water and fish

12

passage while in use and after log-drives when the dams were abandoned, many still intact. DFG and others recognized (in the early 1960s) that removing and/or modifying logging-related fish impasses was important because it didn't matter how much wood was present in spawning and rearing habitats if fish could not get access to the habitat. At some locations, well intentioned efforts to provide fish passage may have removed too much wood to the detriment of fishery
12 rearing habitat. However, past debris removal practices should be discussed with the acknowledgement that past logging activities initiated the need to clear streams of wood in order to re-establish migration for salmon and steelhead. Explaining this fact in context of the DFG stream clearings will provide readers with a more complete account of why in-stream wood is, in part, lacking in some JDSF streams.

- Page VII.6.1-91: It's stated that, *"Timber operations within channel migration zones will not occur (except as allowed in the Forest Practice Rules)"*. What is
13 the definition of a Channel Migration Zone?

- Page VII.6.1-91: it is stated that, *"Within Class I and Class II WLPZ, retain a minimum of 240 sq. ft. conifer basal area following completion of timber operations"*. How will this strategy meet Forest Practice Rule 897 [Implementation of Act Intent (b)(1)(C)] to *"Retain or recruit late and diverse seral stage habitat components for wildlife concentrated in the watercourse and lake zones and as appropriate to provide for functional connectivity between habitats"*.
14 Contrast this with the fact that the Forest Practice Rule's WLPZs are typically managed under selection silviculture for tree growth where the largest trees can be removed at the end of every growth cycle. Without additional requirements to allow trees to recruit into larger diameters, these areas will not contribute the type of large wood that historically formed the large woody debris and late seral components in the riparian zone. Alternatives D-F, particularity Alternative D developed from recommendations of the JDSF Citizen Advisory Committee, appear to meet this goal most effectively with their protected riparian zones for all watercourses using harvest limitations similar to the methods described in FEMAT (1993). Management that's designed to establish late successional habitat will likely guarantee sources of large wood as riparian zones develop late-seral habitat (noted on page VII.6.1-37).

- Page VII.6.1-102: The impact evaluation of the DFMP (alternative C1) and alternative C2 is based on using standard FPRs [14 CCR 916.9(i)] for LWD recruitment with the addition of 25-foot no-cut zones in the inner WLPZs and additional silviculture considerations. This is a good strategy to employ
15 especially when WLPZs are placed at the base of hill slopes as opposed to inner floodplain margins because WLPZs are subject to natural destruction from lateral channel migration in addition to high winds that penetrate both streamward and landward of WLPZ edges (Reid and Hilton 1988). In 1999, a Scientific Review Panel (SRP) of scientists was created to undertake a comprehensive review of the California Forest Practice Rules (FPRs) regarding their adequacy to protect

salmonid species (Ligon and others 1999). The SRP concluded that the FPRs, including their implementation (the "THP process") did not ensure protection of anadromous salmonid populations. The SRP recommended that the watercourse and lake transition line (WLTL) be placed outside of active floodplains (20-year return interval, Bill Trush, pers. comms, 2004). Furthermore, the SRP reasoned that the river channel and floodplain inseparably comprise a stream (the channel zone) and recommended that it neither be harvested nor considered a zone for LWD recruitment. The SRP then opined that if the channel zone or WLTL definitions were modified, the WLPZ widths would have to be re-
15 evaluated. The SRP also made specific rule recommendations such as redefining the watercourse transition line to include the flood plain: *The watercourse transition line is the outer boundary of a watercourse's floodplain as defined by the following: (1) the upper limit of sand deposition; and, (2) evidence of recent channel migration and/or flood debris. The first line of permanent woody vegetation must not be used to determine this transition line.* The current FPR's definition and interpretation of the WLTL uses the first line of woody vegetation to determine the watercourse transition line for unconfined channels. It appears that future JDSF THPs will use the FPR definitions for determining the WLTL. Considering this, DFG recommends that the JDSF management plan instead use definitions recommended by the SRP to improve protection and recovery of salmonid populations.

- Pages VII.6.1-106 and 107: Regarding Impact 3a: Riparian Forest Extent and Quality, the watercourse and lake protection zone's (WLPZ) measures in Alternative C1 and 2 are not adequately explained when compared to Alternatives D, E and F. Thus, it is difficult to evaluate potential project impacts.
16 If Alternatives D-F provide enhanced riparian protection above minimum Forest Practice Rules, plus what's provided in the Alternative C1 and C2, then choosing alternatives D-F is preferred because the Forest Practice Rules do not recognize all critical salmonid and riparian habitat protection measures recommended in the 1999 SRP. In addition, the DFMP does not appear to compensate for where the FPRs fall short in protecting streams and rivers recommended in current literature.

Part VII.6.2, Botanical Resources

- Part VII.6.2.1, Setting: The DEIR should include in the vegetation series, Douglas-fir – Tanoak Series, which incorporates the CNDDB/Holland vegetation types Broadleaved Upland Forest (in particular Mixed Evergreen Forest and
17 Tanoak Forest) and North Coast Coniferous Forest. The Redwood Series is considered to only incorporate the CNDDB/Holland vegetation types North Coast Alluvial Redwood Forest, Alluvial Redwood Forest, and Upland Redwood Forest. Generally this vegetation series forms a mosaic with the redwood series, occupying the more exposed aspects of ridgelines and upper slopes.

- Page VII.6.2-2: Other communities or series in the redwood region should include coastal scrub, willow riparian forests and woodlands, native grassland and non-native grassland. 18

- Pages VII.6.2-2 and 6.2-8: Discussions on rare or sensitive vegetation types and Bishop pine forest should include Northern Bishop Pine Forest as a sensitive vegetation type. The Northern Bishop Pine Forest is very limited in distribution and is often poorly understood when within its range. 19

- Page VII.6.2-7: Please note the correct spelling of *Cupressus goveniana* ssp. *pigmaea*, and sensitive plants frequently associated with Mendocino pygmy cypress forest are: 20

  Rare Species:
  1. *Arctostaphylos mendocinoensis* pygmy manzanita
  2. *Boschniakia hookeri* small groundcone
  3. *Campanula californica* swamp harebell
  4. *Carex californica* California sedge
  5. *Cupressus goveniana ssp. pigmaea* pygmy cypress
  6. *Juncus supiniformis* hair-leaved rush
  7. *Lilium maritimum* coast lily
  8. *Pinus contorta* ssp. *bolanderi* pygmy pine
  9. *Rhynchospora alba* white beaked-rush
  10. *Usnea longissima* long-beard lichen

  Uncommon/Unique Species:
  1. *Calamagrostis bolanderi* Bolander's reed grass
  2. *Ceanothus gloriosus var. exaltatus* glory brush
  3. *Cladina portentosa ssp. pacifica* Pacific reindeer lichen
  4. *Cornus Canadensis* bunchberry
  5. *Sphagnum* sp. peat moss
  6. *Veratrum fimbriatum* corn lily

- Page VII.6.2-9: Please note tree gaps are another important natural event that creates micro sites in the redwood forest. 21

- Page VII.6.2-9: Another important forest community component beside fungi (please note lichens are in the Kingdom of Fungi under the Division Mycomycota) are the bryophytes (mosses, liverworts, and hornworts), which aid in soil and nutrient retention through reduction of surface erosion and absorption of nutrients and water during rains. In addition, there are three rare mosses identified in CNDDB Rarefind database for Mendocino County (although not in the vicinity of JSDF). The distribution and rarity within this taxonomic group is poorly understood. Information pertaining to this group would benefit by encouraging inventories and academic studies in JSDF. 22

- Page VII.6.2-12: May want to reference the taxonomic reclassification (change of genus) for Cape ivy (*Delairia odorata*), this name is noted in Appendix 7B Botany. Also correct generic scientific name for pennyroyal (*Mentha* vs. *menthe*). 23

- Page VII.6.2-14: Table VII.6.2.1 should include marsh pea (*Lathyrus palustris*), a sensitive plant range extension from Humboldt County to the Garcia River Watershed in Mendocino County. This species was located in a redwood forest opening wetland in association with redwood, Douglas-fir, tanoak, *Baccharis pilularis*, *Athyrium felix-femina*, *Carex aquatilis C. hardfordii*, *C. gynodynama*, and *Juncus patens* (pers. com. Heise 2005). 24

- Page VII.6.2-104: Table VII.6.2.1 should cite the State ranks for the species as many of these species also have State sensitive status (in particular S1 and S2 ranks). Another relevant rank is the global rank, which is similarly assigned as the State rank but is reflective of the world status. The State ranking system is a separate system for assigning status and provides additional status information for a species. 25

- Page VII.6.2-15: Table VII.6.2.2. should be revised and updated to <u>exclude</u>: *Calamagrostis foliosa*, *Ceanothus gloriosus var. gloriosus*, *Collomia diversifolia*, *Hemizonia congesta ssp. tracyi*, *Linanthus acicularis*, and *Ribes victoris*; and <u>include</u> *Lotus formosissimus*. 26

Part VII.6.2.2, Regulatory Framework for the Protection of Botanical Resources

- Page VII.6.2-17: CEQA also provides for assessment of regional rare and unique species [CEQA § 15125(c)]. Also state rank is an important status factor in assessing whether a species meets the criteria of rare, threatened, or endangered under Section 15380 CEQA Guidelines. 27

- Pages VII.6.2-17 and 18: The Native Plant Protection Act (NPPA) does not exempt timber operations from the California Endangered Species Act, CEQA, or the Forest Practice Act (Weburg Case 2003). The unmitigated salvaging of a rare or endangered plant would likely be considered a significant impact under CEQA. In addition, the NPPA does not apply to species not listed by the Fish and Game Commission as threatened, rare, or endangered. Hence application of the NPPA Section 1913 is not appropriate for determining the need to adequately assess sensitive botanical resources in the THP process. The most pertinent NPPA exemptions are prohibition of take and Fish and Game Code Section 2081 take permit. 28

Part VII.6.2.4, Specific Management Actions

- Page VII.6.2-19: Special Concern Areas and Unique Habitats should address Bob Woods Meadow, and the two sensitive vegetation types; Sphagnum Bog (separate from wetlands) and Northern Bishop Pine Forest. 29

- Page VII.6.2-19: Special Concern Areas and Unique Habitats, should include mature Douglas-fir/hardwood stands on gentle slopes with increase surface water retention and well developed duff layers (such as along ridgelines) that are rich in fungi and unique mycotrophic plants including sugar-stick *(Allotropa virgata*), gnome plant (*Hemitomes congesta*), pine sap (*Monotropa hypopithys*), 30 and California pinefoot (*Pityopus calfornicus*). These species are non-photosynthetic plants that obtain fixed carbon from other plants via shared fungi that are mycorrhizal with tree roots (three-way relationship), and have a high level of specificity with a host fungus (Bidartondo and Bruns 2001). The California pinefoot is listed as uncommon. All species have known occurrences on the Forest, and are slow establishers dependent on mature forests and specific host trees (cut the tree, and fungi and plant die.)

- Page VII.6.2-20: Cypress Groups, it is unclear whether the sensitive pygmy 31 cypress will be protected throughout its distribution on the Forest including single trees on productive soils.

- Page VII.6.2-20: Pygmy Forest, limiting (vs. continuing) recreational activities may be appropriate for this rare and fragile vegetation type. The EIR should 32 provide an in-depth impact assessment for all activities proposed in the pygmy forest. Potential beneficial management is burning, invasive weed control, and road abandonment.

- Pages VII.6.2-21 through 6.2-23: It is unclear if surveys will have a floristic element, which is a key component of the *Guidelines for Assessing the Effects of* 33 *Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000). Please note floristic surveys:

    1. Generate a higher quality survey, noting all you see greatly improves the field review of the flora present in a project area. A predictive survey can miss taxa not predicted to occur and the surveyor will not be as observant with a narrowly focused survey (regardless of the skill).
    2. Detect not only unexpected habitat associations of sensitive plants, but unpredictable micro-habitat occurrence within larger vegetation types, species range extensions, species occurrence within ecotones that may not have been predicted as potential habitat (a common occurrence).
    3. Generate an overall species list that can be referenced, for example if the assessment has missed a sensitive species the omission can be addressed both from the reviewing point of view as well as the project proponent.
    4. Provide a necessary component of a professional botanical survey for sensitive species and allow a determination of adequacy of the surveyor/survey, which is essential in determining whether sensitive species would be detected.
    5. Lastly, floristic data (such as project generated) is crucial in developing knowledge of JDSF flora and sensitive botanical resources.

- Pages VII.6.2-22 and 6.2-24: The DEIR cites that sensitive plant knowledge will be enhanced in part on a project-by-project inventory basis, however without a floristic component to the survey methodology, there is unlikely to be an effective mechanism for collecting botanical data (such as new sensitive species or species composition and diversity). Also, development of appropriate management strategies will require a monitoring component. Monitoring is not discussed in the DEIR. 34

- Page VII.6.2-23: As currently stated, survey design will be "*based on the concepts contained in the CDFG Guidelines*". This statement is unclear. Will surveys be conducted in a manner consistent with the CDFG Guidelines? The intent of CDFG Guidelines is to provide the factual and scientific information needed for determining the adequacy of the survey and surveyor, and to assess the significance of a project to impact sensitive plants pursuant to CEQA Section 15064. These guidelines apply generally to proposed projects under CEQA. In reviewing THPs, DFG relies on these guidelines as well as CEQA Sections 21000 of the Public Resources Code and Sections 15000 of the California Code of Regulations. 35

- Page VII.6.2-23: Surveys and Mitigation Development should include provisions for DFG to review and comment on survey reports (often surveys are conducted after the THP review process), and consultation with DFG if an activity has the potential to impact a sensitive species. Consultation with DFG by the administrating agency is required for projects undertaken pursuant to a certified regulatory plan in lieu of the EIR process (CEQA Guidelines §§ 15250-15253). 36

- Page VII.6.2-23: Sensitive plant documentation should include vouchering of populations (may include more than one occurrence) with a recognized herbarium such as the Jepson Herbarium at University of California at Berkeley or the College of the Redwoods Herbarium at the Fort Bragg Campus. Please note that a federal or state endangered, threatened, or rare listed or candidate species requires a permit to collect or take. For unlisted sensitive plants, collection should only be done if a given population is greater than 20 plants and include representation of the key features. All specimens should be pressed and put in between sheets of newspaper with a herbarium label made out of 100% rag paper (archival paper). 37

Part VII.6.2.6, Impacts

- Pages VII.6.2-26 through 6.2-29: Impact 3 and Impact 4, the current inventory data of the botanical resources on JDSF is not extensive, and proposed surveys do not appear or have a floristic component. How will new species, range extensions, or unpredicted species occurrence within new habitat or ecotones be detected? Last year, floristic surveys in the Garcia River drainage detected range extensions for two significant species; Santa Cruz clover (*Trifolium buckwestiorum*) was a county extension from the south, and marsh pea (*Lathyrus palustris*) was a county extension from the north. 38

- Page VII.6.2-27, Par. 4: The DEIR implies that surveys will be conducted as necessary if "*potential to significantly impact a listed species*", and may differ for listed and non-listed sensitive species. It is not clear what is meant by this. It should be noted that surveys for listed and non-listed sensitive species should be conducted in habitat areas that will receive management impacts. Mitigation (vs. surveys) is based on significance of impacts. In a letter to Mr. Neil Fischer from Mr. William Snyder, dated July 19, 2001, he states "*Surveys are not a requirement; but unless the presence or absence is established, the available range of mitigations which would meet the requirements of 14 CCR 15370 would generally be limited to avoidance of suitable habitat.*" 39

- Page VII.6.2-31: Table VII.6.2.3, robust monardella (*Monardella villosa* ssp. *globosa*) can be associated with upland forest openings and should be addressed as an upland forest associated species. 40

- Page VII.6.2-32: Table VII.6.2.3, Pygmy Functional Group should include the sensitive pygmy cypress (*Cupressus goveniana* ssp. *pigmaea*), which is the primary defining species of the pygmy forest. 41

- Page VII.6.2-32: Table VII.6.2.3, Wet Areas Functional Group should include marsh pea (*Lathyrus palustris*), coast lily (*Lilium maritimum*), North Coast semaphore grass (*Pleuropogon hooverianus*), and swamp harebell (*Campanula californica*). Although some of these wetland species (hydrophytes) are cited in the Upland North Coast Conifer Functional Group, they also occur in wetlands outside of this group. 42

- Page VII.6.2-34: Forest understory species dependent on shade and moist forest microclimate are also sensitive to canopy removal. 43

- Page VII.6.2-35: The Pygmy Forest and Closed Cone Forest/Openings Functional Groups, cites that no significant cumulative effects are expected to occur with management proposed and mitigation adopted. It should be noted that fire suppression is an important cumulative effect and it is not clear whether reintroduction of fire is proposed in these vegetation types. 44

- Page VII.6.2-35: The Environmentally Sensitive Habitat Area (ESHA) designation for pygmy forest only applies to the Coastal Zone. A significant amount of pygmy forest acreage is outside the Coastal Zone and on private lands where future protection is not necessarily guaranteed. 45

- Page VII.6.2-38: It is unlikely that the *Trillium ovatum* on JDSF differs significantly in habitat and life history requirements. The species occurrence in early seral or clear cut stands may be a factor of localized persistence rather then preference. Plant ecologists and botanists consider this species a mesic forest understory plant throughout its range. Many of the liliaceous forest herbs are slow establishers and are sensitive to timber harvest. Species such as 46

Clintonia uniflora, *Smilacina racemosa*, *S. stellata*, and *Trillium ovatum* have declined over 40% more in harvest areas than in retained forest aggregates (Nelson and Halpern 2005).

- Page VII.6.2-38: The two studies suggesting that mid to late seral stands are not rich in forbs and grasses when compared to other seral stages on JDSF does not fully assess successional and species composition factors. Early seral stands will differ in species composition (shade intolerant and fast establishers) from mid
47 to late seral stands (shade tolerant and slow establishers). Species diversity is high in early seral stands then it drops significantly in early to mid seral stands (such as in "dog-haired" stands). Forest understory species diversity increases with time and peaks in old growth stands (Halpern and Spies 1995). Early seral and late seral stands offer different types of plant diversity and both are important seral stages for plant diversity.

- Page VII.6.2-42: In addition to clean straw mulching, seeding with non-invasive species is another important measure for preventing the introduction of invasive weeds on roadbeds and other areas needing erosion control. Seeding species selection should utilize native (preferably) or non-native species not known to be
48 persistent or invasive until native species reestablish. Commonly, annual (or "Italian") ryegrass (*Lolium multiflorum*) has been utilized on forest lands. Ryegrass is a well recognized allelopathic, persistent and invasive non-native grass. DFG does not recommend the use of ryegrass on JDSF.

Part VII.6.2.7, Additional Management Measures and Monitoring

- What management measure(s) will be used to assess potential direct and cumulative impacts to sensitive species from management activities? The DEIR does not appear to specifically address sensitive plant monitoring. Monitoring
49 can be a powerful tool to determine trends over time and demonstrate whether management objectives for sensitive plants are effective. The DEIR should include a monitoring strategy for sensitive plants.

Part VII.6.5. Wetlands

Part VII. 6.5.1, Regional and Project Setting

- Page VII 6.5-1: Definition should also include that wetlands are transitional areas
50 between terrestrial and aquatic systems.

- Page VII 6.5-1: The quality and relative value of a wetland is also dependent
51 upon its biological function as well as physical characteristics.

- Page VII 6.5-1: DEIR should provide a more comprehensive list of wetland vegetation types on JDSF such as freshwater marsh and swamp, and should
52 also include the Forest's Lost Lake.

- Pages VII 6.5-1 and 6.5-3: It is unclear what other types of management may be applied for wetland habitats that "maintains or restores productivity", besides WLPZ protection measures. 53

Part VII.6.5.2, Regulatory Framework for the Protection of Wetlands

- Page VII 6.5-2: The DEIR should include a discussion on the Porter-Cologne Water Quality Control Act. 54

Part VII.6.5.5, Impacts

- Page VII 6.5-4: Management activities that are subject to the THP review process should also identify other potential wetlands such as marshes, swamps, bogs and fens, which are not necessarily associated with riparian habitats. In addition, the DEIR should discuss methods that will be utilized to identify and delineate wetlands in the field. 55

- Page VII 6.5-4: Indirect impacts to wetlands may also result from changes in hydrology resulting from upslope harvesting (such as microclimate alteration) and road building/maintenance (such as drainage diversion or concentration), as well as changes in canopy cover and colonization of invasive non-native plants. 56

Part VII.6.6. Wildlife and Wildlife Habitat

- To improve the clarity of many tables (e.g., VII.6.6.3), cells with no values should not be assigned a value of 0, but rather indicated by a dash (-). A value of 0 should only be used where the measurement was 0. "Other public" should be identified in the text. For comparisons of downed log characteristics, the data should also be expressed in units of volume as well as number. 57

- Page VII 6.6-21: States that "Other unusual habitat types that also occur include northern coastal salt marsh, coastal brackish marsh, coastal and valley freshwater marsh, and grand fir forest." Do all of these occur on JDSF? 58

- Page VII.6.6-30: In Table VII 6.6.5 why are there blank cells? For example, what canopy cover is necessary for conifer < 24 inches to be "Low to Moderate capability Habitat?" 59

- Page VII.6.6-33: Figure VII 6.6.8a does not seem to show what the related text implies. What are the data points on the graph? 60

Part VII.6.6, Marbled Murrelet

- Page VII 6.6-53, Par.1: Please update using recent at-sea-survey data. Although there is a 300-mile gap in marbled murrelet distribution through marbled murrelet Recovery Zone 5, marbled murrelets continue to be detected in low numbers off the coast of Mendocino County. 61

- Page VII 6.6-53, Par.2: Note that the use of radar to detect marbled murrelets
62 relies not only on the flight speed of the radar target, but also the target size, flight path, and observed flight time.

- Page VII 6.6-53, Par.3: Include that marbled murrelets at inland detections have
63 been documented using both radar and ground-based audio-visual surveys.

- Page VII 6.6-54, Par.1: The list of positive murrelet detection sites is confusing. The listed detection locations could be better organized by specifying whether murrelets were detected by radar or audio-visual survey methods. In addition,
64 drainages should go from north to south (or vice-versa), and counties of the drainages should be specified. Correct Wheatfield Creek to Wheatfield Fork of the Gualala River (Sonoma County) and include the South Fork Eel murrelet detection (see CNDDB).

- Page VII 6.6-55, Par.1: Specify that Horsetail Gulch <u>and</u> Gulch 16 (1.5 miles east of Horsetail Gulch) are two known occupied sites on Campbell Timberland
65 Management lands in the Ten Mile drainage (Middle Fork) as identified using protocol audio-visual surveys.

- Pages VII.6.6-56 and 57, Table VII 6.6.8: Consider re-organizing table by drainages from north to south within the 10-mile radius of JDSF rather than by date. Clarify whether breeding behavior is occupied behavior as indicated by sub-canopy flights, circling etc. (see Evans Mack et al. 2003). Note that Ralph et
66 al. 1994 is outdated- protocol standards (footnote "a" on table). The protocol has been revised several times and the most current survey protocol is described in Evans Mack et al. 2003. Footnote "b" - please confirm whether the USFWS ever had a murrelet survey protocol. Please correct the entry Noyo, the Worm 2-survey results by Mendocino Redwood Company which indicated that equivocal murrelet vocalizations were detected by the surveyor. In response, DFG asked for an additional year of survey where no murrelets were detected.

- Pages VII.6.6-56 and 57: Table VII 6.6.8 and Table VII 6.6.9 appear duplicative. Consider merging or having one table for radar detections and one table for
67 ground-based audio surveys (protocol, non-protocol, or incidental). Currently, protocol for radar surveys has not been endorsed by the Marbled Murrelet Technical Committee.

- Page VII 6.6-72, Par.1: Evans Mack, et al. (2003) briefly describe the radar use for surveying marbled murrelets (as opposed to recommending it), but the
68 protocol focuses on ground-based audio-visual survey methods. Consider the use of radar as a course filter to detect murrelet presence by drainage or watershed. Ground-based surveys should accompany radar surveys. As stated above, no radar protocol exists for surveying murrelets.

- Page VII 6.6-72, Par. 4: See McShane, et al. (2004) for updated threat level from
69 murrelet nest predators.

- Page V11 6.6-75, Par.3: Please correct the diameter of nest branches in
70 California as reported in Hamer and Nelson (1995) as ranging from 6 to 24 inches.

- Page VII.6.6-80: Figure VII.6.6.8b is difficult to read and interpret. Consider using color and well-defined polygons to delineate acreages of potential marbled
71 murrelet habitat.

- Page VII 6.6-83: Regarding the restoration of marbled murrelet habitat, the application of the Carey et al (2002) guidance should be debated based on site-
72 specific values to murrelets and other forest management goals. DFG looks forward to participating in creating timber management schemes intended to promote marbled murrelet and/or late seral habitat conditions.

Part VII.6.6.3, Project Measures for Protection of Resources

- Page VII.6.6-113: Regarding hardwood standards, what are the scientific and biological bases for the 10% and 15% of the basal area goals? Are these percentages of the pre-harvest or post-harvest stands? How will hardwoods be retained as ecologically important components of stands, especially in stands where they are reduced and subjected to competitive conditions in the resultant
73 conifer stands? Similar to the deadwood management plan outlined above, there should be a hardwood management plan that also includes monitoring with feedback to specific management actions if the goals are not being met. The plan needs to recognize that hardwood-dominated timber sites are a natural, albeit long-lasting early seral stage. As such, conversion of all such stands to maximum timber production is unwise. We recommend that JDSF maintain some representative hardwood dominated stands in each planning watershed where they are present.

- Page VII.6.6-113: Regarding the snags standards, where are the "wildlife special concern areas" described, and what acreage do they cover? What are the "select areas" in which JDSF "will recruit snags through indirect measures, such
74 as retention of larger conifers (at least 30 inches DBH)?" As suggested above, recruitment should be assured in all timber harvest units, regardless of silviculture.

- Page VII.6.6-113: Regarding the LWD standards, to assure that the demise of one tree does not dominate the standard (and thus overly-localize the value), the
75 standards should specify that the counts should be limited to pieces derived from separate trees, where possible. As for other habitat components, monitoring for LWD should be described and a feedback loop should be included for purposes of adjusting the strategies if warranted.

- Page VII 6.6-114: Regarding the "Species of Special concern" bullet, it should be clear that the primary mitigation for listed species is avoidance. For listed species, determining significant effects should not be diminished by rationalizing perceived minor effects or the presence of off-site habitat or individual occurrences. These factors may be brought into DFG's decision process where take cannot be avoided. For each species of special concern (listed or otherwise) where a project areas has habitat or species presence, the impact assessment should include nearby areas where impacts may also occur. A cumulative impacts assessment area shall, by default, extend "beyond the boundaries" of the assessment area. 76

- Page VII.6.6.115: The paragraph prior to "training" is unclear. Is "project" as used in this paragraph equivalent to "project" as defined under CEQA, or more loosely as any activity that JDSF undertakes? Does this paragraph mean that the rigor and focus of scoping (and subsequent surveys and/or development of mitigation measures) will differ between projects based on the premises of perceived habitat impact? The paragraph in the project examples is unclear. Does it mean that activities leading to repeated, periodic disturbances will have a different scoping/mitigation process than those for pre-commercial thins, etc.? 77

- Page VII.6.6.116: Regarding survey protocols, it should be noted that some species may not have "established protocols," and JDSF may want to deviate from established protocols for site-specific reasons. This paragraph should simply state that the protocols will be those provided or endorsed by DFG (and USFWS, as appropriate). 78

Part VII.6.6.4, Additional Management Measures

- Pages VII.6.6-118 and 119: The acreage figures provided for "contribution to marbled murrelet habitat" are confusing, and could be easily cleared up if presented in tabular format. Is the 20% inclusive of the old-growth stands? Where are the non-stream corridor late-seral development stands? Do these figures take into account any of the possible key areas for murrelet habitat suitability assessment? What amount of the "key areas" is CDF committing to provide? 79

- Pages VII 6.6-118 and 119: Alternatives C1, C2 and E propose as mitigation the implementation of Contribution to Recovery of Marbled Murrelets. DFG finds that the proposed Contribution to Recovery of Marbled Murrelets is ill-defined, unclear and will unlikely be effective in contributing towards the continued existence and improvement of marbled murrelet populations in the area. We offer the following reasons: 80a
  1. Only the *identification* of key areas for *assessment* of marbled murrelet habitat is proposed. In other words, the Russian Gulch, lower Big River, Mitchell/Jughandle Creek, and lower Hare Creek areas have not been selected as areas for murrelet habitat protection and recruitment. Rather, the areas have only been identified as places to examine in the future (i.e., 18-24 80b

months following DFMP implementation) for murrelet habitat retention and recruitment. The DEIR fails to disclose the criteria and justification used to identify areas for assessment, and does not detail how areas will be assessed and then chosen for murrelet habitat retention and recruitment. For example, why are the Caspar, upper Hare, and Upper Parlin Creek watersheds not identified as key areas for assessment for marbled murrelet habitat recruitment even though, according to Map Figure R, these areas are fully suitable for marbled murrelets? All identification, assessment and selection criteria of marbled murrelet habitat areas should be fully described and available in the environmental document for public and agency review. CDF should seek input from DFG and FWS prior to the selection of marbled murrelet retention and recruitment areas.

2. The procedure for protecting remaining old-growth trees and stands is unclear. For example, does the protection of old-growth trees also include the retention of neighboring trees to minimize windthrow and microclimate fluctuation? Also, it is uncertain from information provided whether old-growth trees include all trees with potential marbled murrelet nest platforms. 80c

3. The identification of marbled murrelet areas for assessment is not based, at least in part, on current, relevant marbled murrelet surveys performed in JDSF or potential murrelet nest tree abundance and availability. 80d

4. The protection of riparian old-growth stands may not contribute significantly to murrelet habitat recovery unless they connect to larger blocks of late successional forest habitat. Thin, linear patches of habitat will unlikely be large enough to provide adequate nesting habitat for murrelets. Also, large perimeters of edge between late and early successional forest habitats may reduce nearby marbled murrelet nest success by attracting and facilitating murrelet nest predators such as Steller's jays and ravens. 80e

5. The proposed Contribution to Recovery of Marbled Murrelet Habitat plan is not a clear and specific plan to improve nesting conditions for murrelets on JDSF. A more effective contribution towards the recovery of marbled murrelets in the area would be through the implementation of a marbled murrelet management plan. This would entail the preservation and recruitment of large blocks of late successional habitat that lie immediately adjacent to, are contiguous with and are in the vicinity of, existing known occupied marbled murrelet habitat such as the Russian Gulch State Park. Any removal of trees within these blocks would only be done to enhance marbled murrelet nesting habitat and would be conducted only with state and federal agency, university, and marbled murrelet technical committee input and oversight. Humans and human garbage and food sources should be strictly controlled and/or removed in habitat retention and recruitment areas. A marbled murrelet monitoring program should be included as part of the management plan. To date, it appears that the presence of marbled murrelets on JDSF has only been cursorily investigated through THP-driven murrelet surveys. Thus, survey information is absent over large portions of JDSF. Under a more comprehensive strategy to recover marbled murrelets 80f

and their habitat on JDSF as part of the DFMP, landscape-level surveys using radar should be conducted in key drainages. In conjunction with radar surveys, rigorous ground-based murrelet surveys (i.e., increased survey effort above current protocol level) should be conducted. If marbled murrelets are detected outside of above-mentioned late successional forest blocks, then appropriate measures to protect, buffer and expand murrelet occupied areas should be applied. Survey information would also be used to implement a murrelet predator management plan if warranted, and direct murrelet habitat management research.

- As proposed, it is doubtful that the DFMP's Contribution to Recovery Marbled Murrelet Recovery described in the DEIR as an additional mitigation measure will help improve habitat conditions for marbled murrelets adjacent to and within JDSF, and in Conservation Zone 5 in general. The DFMP should include a clear
81 and concise marbled murrelet management plan as explained above, that fully justifies and accurately identifies; a) specific areas for suitable and near-suitable habitat retention (e.g., adjacent to Russian Gulch State Park), b) short and long-term murrelet habitat recruitment, and c) all current and future timber harvesting, habitat management, research and human uses in the recruitment areas. The DEIR should be revised to include such a marbled murrelet management plan.

Part VII.6.6.6, Project Impacts

- Page VII.6.6-122, Other Unique and Special Habitat Features: There is little mention of wildlife trees or the importance of wildlife tree habitats such as basal hollows. However, the DEIR discloses at least 14 sensitive wildlife species that depend on large tree structures. In addition to developing late seral stands in riparian zones and around existing old-growth stands, the DEIR should address individual trees with special wildlife elements. Large, decadent, predominant trees that were once abundant prior to the extirpation of late seral forests are currently rare and scattered on commercial timberland, where past timber
82 harvests removed most of the old-growth/wildlife tree habitat including isolated decadent, predominant trees exhibiting either (singularly or in combination) basal hollows, small cavities, internal rot or mistletoe broom, crevice cover (loose or deeply furrowed bark), complex crowns, and lateral large limbs or epicormic branching (new growth such as shoots or limbs borne on old wood of trees). For trees with fire-derived basal hollows, complex or broken crowns and other cover types, their vertebrate wildlife value for species such as Vaux's Swift and Purple Martin (in reference to page VII.6.6-128) and is also extensively documented (Gellman and Zielinski, 1996; Franklin, et al., 2000; Hunter and Mazurek, 2003; Mazurek and Zielinski, 2004). There was very little discussion in the DEIR about the importance and essentially irreplaceable nature of basal hollows for wildlife. These forest elements are considered irreplaceable features for wildlife habitat and in some cases they are not obvious old growth, but instead, damaged (e.g., by fires of wind or both) second growth that have developed wildlife habitats. How will trees that exhibit the aforementioned wildlife habitat characteristics be evaluated and protected when they are not obvious old-growth trees? The DEIR

should disclose what characteristics will be used to identify special wildlife elements and that they will be given special consideration in the management plan. Consider adding additional retention criteria (similar to the aforementioned characteristics above) to Mitigation 1 on page VII.6.6-131 (Mitigation and Monitoring) that captures these types of wildlife trees.

- Page VII.6.6-123: Regarding the lotis blue butterfly, coast hosackia might be the species host plant, but other herbaceous species of the pea family are thought to be potential host/food plants. Also coast hosackia is not considered an early successional species, and its habitat is better described as open wetland habitats rather then disturbed wetland habitats. 83

- Page VII.6.6-124: The contention that WLPZ protection measures will improve habitat of yellow-legged frogs is not fully supported by the literature. The DEIR is proposing to manage stream side areas for high canopy cover and cool water for several other species. However, yellow-legged frogs are generally more abundant in watercourses with little canopy and warm water. Thus, WLPZ management goals could well reduce habitat quality for this species. It is not surprising to find that a specific suite of management actions might enhance habitat for some species and diminish it for others. 84

- Page VII.6.6-124: General comment about the use of CWHR in the analyses presented. The DEIR identifies the version and the habitat capability calculation method. However, it does not note what components were included or excluded from the analyses. A suggestion is to introduce the CWHR model before its application is reported in the document. A table that identifies habitat types and describes the stages used in the subsequent tables should be provided. At the same time, the document should describe the growth models used to grow the CWHR stands over time. 85

- Page VII.6.6-125: What is meant by "protecting" nest sites and post-fledgling areas of 100 acre and 300 acre, respectively? Does this pertain to goshawk nests? 86

- Page VII.6.6-126: Regarding osprey, note that the USFWS does not exert specific jurisdiction of this species relative to the FPRs. 87

- Page VII.6.6-127: Regarding murrelets, the text should be specific in stating that mitigation measures are avoidance measures. 88

- Page VII 6.6-127, Par.3: The DEIR states that the DFMP defines marbled murrelet habitat as any intact remnant stand of old-growth forest at least two acres in size and 200 feet across. Marbled murrelets have been documented nesting in second-growth forest with single residual conifers with suitable nest platforms or in mature forest stands with scattered residuals with platforms (DFG files). This definition should be revised to reflect recent murrelet habitat nest 89

stand and nest tree characteristics described in McShane et al. (2004) and Evans Mack et al. (2003).

- Page VII 6.6-127: The DFMP proposes the "management" of habitat recovery areas to advance the development of late successional forest conditions and potential for murrelet nesting. The DFMP is unclear on what management actions will be taken and where they will be taken relative to occupied and unoccupied murrelet habitat. To date, DFG is unaware of any scientific research
90 that has specifically examined use and breeding success of murrelets nesting in stands modified to benefit murrelets. However, experimental research on creating murrelet habitat in JDSF may be warranted. DFG believes that it is imperative that any research performed to improve marbled murrelet nesting habitat conditions on JDSF be conducted in a scientifically rigorous manner with oversight from state and federal wildlife agencies as well as universities and groups such as the Marbled Murrelet Technical Committee.

- Page VII.6.6-128: Within the Vaux's swift and purple martin section, there seems
91 to be a partial discrepancy with the snag standards specified on page VII.6-6-114.

- Page VII.6.6.130: Regarding tree voles, identify the basis for using the 100
92 meter dispersal distance in your analysis.

- Page VII.6.6.130: Regarding Pacific fisher, provide the rationale that the hardwoods management program benefits the species. The opposite is more
93 likely.

- Page VII.6.6-130: Mentions "other habitat SCAs," but these are not identified,
94 described, located, or quantified in this chapter.

Part VII. 6.6.7, Mitigation and Monitoring

- Page VII.6.6-131: Mitigation 1 implies that snags will be subject to removal after retention goals are met. Snags should not be removed except for safety purposes. Rather, if snags are above the retention goals, then it seems more appropriate to back-off the rate of green-tree retention for recruitment purposes.
95 Under "monitoring, 1" the DEIR indicates that the DFMP establishes monitoring standards then indicates no changes in the standards are required? This is unclear. When referencing "monitoring standards", is the document referring to the protocols, the statistics around the estimates, or is this statement referring to not changing the retention goals? In any case, monitoring should feed-back in the management loop to assure that the desired conditions are being achieved.

Part VII. 6.6.8, Comparison of Alternatives

- Page VII.6.6-133: The discussion of early stages of forest development model suggests that "early seral forest in this condition is not expected to persist to
96 2060." Yet, the DEIR earlier states that the even to uneven-aged management

96 proposal will be about 29% to 64%. What sort of management will the remaining 6% receive if not even or uneven-aged? In addition, group selections will provide early seral-stage values. This statement in the DEIR needs to be clarified.

- 97 Page VII.6.6-134: Why does the DEIR use Coastal Scrub CWHR to represent the earliest transitory stages of forest development of a forest type, which is essentially size class 1 within whichever forest type it is? Coastal Scrub is considered an intermediate coastal vegetation type.

- 98 Page VII.6.6-134: as a limitation on the modeling approach, the DEIR should include the assumption that habitat elements are either fully present (or absent, depending on the element switches used). There should be a description of the crosswalk of forest vegetation to WHR, or at least the rules followed to make the assignments. The growth and yield models used to grow WHR types should be specified.

- 99 Page VII.6.6-134: For the non-JDSF assessment area, the DEIR should describe how it was derived and either describe its geographic extent or map it. Why has the future of landowner's timber management programs not addressed hardwood control efforts? As various landowners achieve greater levels of success in hardwood control, hardwood types may become greatly diminished across the assessment area.

- 100 Page VII.6.6-135: The description for modeling MRC forests is confusing, especially the last 2 sentences.

- 101 Page VII.6.6-135: Why the decline in total acreage in Table VII 6.6.15?

- 102 Page VII.6.6-137: The reference to harvest option "r1" needs a description/definition.

- 103 Page VII.6.6-138: For NIPFs, is the assumption about which model (industrial, parks, and high-retained selection) supported by recent history?

- 104 Page VII.6.6-138: The increases as reported by percentages can be misleading. It would be easier to understand changes such as 3000+% for a couple of types as 30 x the current amount.

- 105 Page VII.6.6-138: The last paragraph seems in error. Is the projection that even-aged management will no longer be used in the assessment area? That does not reflect the assumptions stated above.

- 106 Pages VII.6.6-140 and 170: Figures such as VII.6.6.9 and VII.6.6.12 are too busy. They should be segregated into several figures by vegetation types to better reveal how age classes change over time. Eliminating any seral stage will

106 be cause for concern and might necessitate management actions to assure that they are represented.

- 107 Page VII.6.6-219: The definition of Total Edge Index appears incomplete. It suggests the units should be measured as length (e.g., feet), not percent.

- 108 Page VII.6.6-221: What is the rationale behind the suitability groupings for scores?

Part VII.6.6.9, Alternatives Comparison

- 109 Page VII.6.6-260: It is not clear how Alt C1 and Alt C2 differ. Isn't the "Contribution to Recovery of Marbled Murrelet Habitat management measure" of C1 equal to "increase in the area (primarily in the vicinity of upper Russian Gulch, lower Big River, and upper Thompson Gulch) dedicated to development of late seral forest conditions specifically with the intent of Murrelet habitat recruitments" of C2?

Part VII.10. Hydrology and Water Quality

- 110 Page VII.10-18: Water drafting during timber operations is typically done with a water ("pump") truck that diverts and stores 3,000-4,500 gallons of water. The water is primarily used for dust abatement, road construction and reconstruction, stream crossing construction and fire suppression. Pump trucks are capable of diverting 450 gallons per minute (approximately 1 cubic foot per second), but are regulated to diverting no more than 350 gallons per minute in addition to other (e.g. screen size) criteria as part of Fish and Game, Section 1600, diversion agreements. Pump truck(s) can make multiple (6+) trips per day to the same drafting site. Drafting sites are typically located in fish bearing (Class I) streams and non-fish, aquatic species habitat (Class II) streams. Some drafting sites employ water storage where the typical diversion involves gravity-feeding water through a screened intake (placed in the wetted channel) attached to a small diameter pipe that is attached to a water storage tank (typically plastic or metal and sometimes concrete capable of storing 3,000-10,000 gallons of water). Most Fish and Game Section 1600 diversion agreements contain conditions designed to minimize site-specific, potential stream impacts such as entraining or stranding fish, amphibians and aquatic insects. In order to evaluate potential cumulative impacts from multiple water drafting sites, either in the same stream order and/or in the same planning watershed, the EIR should provide a map of all known drafting sites in and adjacent to JDSF (where they affect streams flowing into JDSF). The EIR should estimate of summer base flows affected by these diversions, by which diversion rates can be more effectively evaluated on a watershed scale and for the purposes of spatially- and temporally-planning future stream diversions. How will water diversions be monitored to ensure that cumulative impacts from multiple diversion sites are not adversely impacting downstream aquatic resources?

- Page VII.10-25: The hydrological importance of fog drip to redwoods, and redwood forest microclimate and associated vegetation is a well recognized environmental influence (Dawson 1998, Burgess and Dawson 2004). Cornell University ecologist, Todd Dawson, found that redwood leaves absorb water directly from the fog (thought to be a factor in the ability of rewoods to achieve great heights), and that about a third of the yearly moisture coming into the forest is actually coming from fog drip off the trees with the understory receiving about two thirds of their water from fog (twice as much as the redwoods themselves). In addition, when water samples (fog water and rainwater have distinctive chemical fingerprints) were taken from intact redwood forest and compared with clear cut redwood forest over a three-year period, the clear cuts were found to contribute less than half as much fog water to the forested environment. 111

Part VIII. Cumulative Effects

Part VIII.15, Cumulative Impacts Summary and Comparison Table

- Pages VIII-102 through 104: Table VIII.14 shows that Alternatives B, C1, C2, and E rely on the Contribution to Recovery of Marbled Murrelet Habitat as mitigation. However, for reasons listed above, DFG believes that the proposed mitigation will be ineffective because it is unspecific, lacks clear short-term and long-term habitat goals, fails to include a feedback mechanism such as murrelet surveys, and does not provide a plan for the control and management of threats to marbled murrelets, such as human disturbance and nest predators. 112

- Pages VIII-102 through 104: The DEIR considers Alternatives E and F to have the potential for significant beneficial cumulative effects for marbled murrelets. DFG believes that benefits to marbled murrelets may only be slight, especially for Alternative E since murrelet retention and recruitment areas, if not well-chosen, monitored and controlled, could negatively affect murrelet breeding success through disturbance and predation. DFG believes that benefits to local marbled murrelet populations could be maximized through the implementation of a marbled murrelet management plan as described above. The plan would include the careful selection and retention of sufficiently-sized and favorably located blocks of suitable and near-suitable habitat on the west side of JDSF as described in Alternative F. The protection and recruitment of JDSF lands adjacent to known occupied Russian Gulch State Park is critical. Within these blocks of habitat, suitable nesting conditions would be allowed to develop, threats to murrelets would be eliminated or minimized, and research and monitoring would provide a feedback loop to assess murrelet presence and use of the habitat as well as determining future habitat needs. 113

- DFG believes that with the inclusion of a well-designed marbled murrelet management plan, the DFMP would be more consistent with JDSF's role as designated critical marbled murrelet habitat, and contribute more towards the recovery of murrelets in this part of its distribution as described in the Marbled 114

114 Murrelet Recovery Plan. Future environmental documents pertaining to the DFMP should contain a marbled murrelet management plan. Without this, potential impacts to marbled murrelets from implementation of the proposed DFMP would not be fully mitigated.

Appendixes

Appendix 7B, Botany

- 115 There appears to be little site-specific data for known sensitive plants (such as location maps, number and phenology of plants, and observation dates). The DEIR should provide, at minimum, the CNDDB field form data such as in a tabular form.

- 116 Appendix 7B-2, Page 2: the Mendocino County USGS 7.5' quadrangles for *Boschniakia hookeri* need to be updated to include Elk (CNDDB 2005)

- 117 Appendix 7B-2, Page 2: please note that the "s" on the species scientific name has been dropped for Thurber's reed grass (*Calamagrostis crassiglumis*), and this error has been repeated in the body of the DEIR.

- Appendix 7B-3: should include an analysis of the following three species with recent range extension into Mendocino County:
  118
  1. *Lathyrus palustris* marsh pea
  2. *Oenothera wolfii* Wolf's evening primrose
  3. *Trifolium buckwestiorum* Santa Cruz clover

Appendix 11, Overview of Existing Sediment Studies Relevant to the JDSF EIR

- Appendix 11 Page 19: It's stated that, *"Sediment budgets prepared for Noyo and Big River watershed assessments shows that road-related sediment (both from road surface erosion and road-related landslides) is a dominant source of sediment from current management activities, while in-unit hillslope erosion is a much smaller contributor."* Following this it's stated that, *"The Road Management Plan and the mass wasting avoidance strategy included in the JDSF Management Plan are expected to significantly reduce sediment yield associated with JDSF timber management activities."* 119 The Road Management Plan contains comprehensive components such as a road inventory and improvement and abandonment strategies intended to reduce forest management-related sedimentation. What is not readily available in the DEIR is a discussion of trespass (primarily trail bikes and 4x4s) and the resulting impact on roads (breaking waterbars, etc.) and on stream crossings (eroding approaches, impacting aquatic habitat, etc.) Obviously, this is an ongoing problem for any large, land manager. Specifically, how can CDF, in its unique capacity to provide State law enforcement personnel, improve its past enforcement efforts to patrol the forest, implement disincentives for, and/or educate the public regarding this vehicular-trespassing impact? It's also apparent that, since JDSF's timber harvesting was suspended, road

maintenance has been substantially reduced; apparently, because of a lack of funds. Future harvest reductions and other revenue depleting events (e.g.,
119 lumber market fluctuations) are a reality that should be planned and compensated for. Therefore, the EIR should detail how it will address future revenue short falls so that funds, equipment and personnel will be available to maintain, repair and even abandon JDSF roads and stream crossings.

Maps

- Figure L Natural Diversity Database: This appears to be the only map for sensitive plant occurrences on JDSF; however, the map does not distinguish
120 what species are present and only notes "plant occurrences". The EIR should provide a sensitive plant map for JDSF that delineates occurrences by species. In addition, wildlife species should also be noted on this map.

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STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

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December 21, 2007

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RE: Responses to Department of Fish and Game Comments on the Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan

Dear Mr. Mastrup:

Thank you for the Department of Fish and Game's March 1, 2006, comments on the Jackson Demonstration State Forest (JDSF) Draft Environmental Impact Report (DEIR). Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter A-5, a copy of which is attached. Where our response to your comments indicates a change to the DEIR or the Draft Forest Management Plan, the change is indicated in **boldface type**. The literature cited in our responses to comments is compiled in an attachment to this response letter.

Please note that since your comments were submitted on the DFMP and DEIR, the Board has issued the 2007 Revised Draft Environmental Impact Report for the Draft Jackson Demonstration State Forest Management Plan Alternative G (RDIER) and the JDSF Administrative Draft Final Forest Management Plan. As appropriate, information from these documents is included in our responses below.

Introductory Comments

Comment A

DFG's review was restricted to the DEIR, and not of the Draft Forest Management Plan (DFMP). We understand the DFMP's intent is to provide programmatic guidance to California Department of Forestry and Fire Protection (CDF) in the management of the Forest, and subsequent to the DEIR, will need to be updated and finalized. Further, we

recognize more site-specific assessment of impacts and mitigation for sensitive species will need to be provided in timber harvesting plans (THPs), and reviewed by the public and trustee agencies.

Response to Comment A

To fully understand the proposed management on JDSF, it is critical to examine both the management plan documents (the DFMP and the Administrative Draft Final Forest Management Plan) and the environmental review documents (the DEIR and RDEIR).

The comment correctly recognizes that more site-specific assessment of impacts and, where the need id identified, site-specific mitigation for sensitive species will be provided during the THP process. This process will continue to provide the opportunity for review and comment by the public and by trustee agencies.

Comment B

Overall, the biological resource discussions in the DEIR were informative; however, portions were unclear, incomplete, and/or not fully integrated with the DFMP.

Response to Comment B

Comment noted. The Board made substantial efforts to ensure that the DEIR and RDEIR were complete and clear. The Board believes that the completeness and clarity of the DEIR and RDEIR are adequate to provide information and to support Board decision making. The commenter provides more specific examples of potential problems of clarity and completeness below, which are addressed there. DFG noted under Comment A that they did not review the DFMP, so it may have been difficult for the commenter to judge the DEIR's integration with the DFMP.

Comment C

The DEIR's analyses regarding potential species impacts are generalized with many species analyses based on various models, such as California Wildlife-Habitat Relationships (CWHR). While useful, models are not always sufficient for accurately assessing potential impacts as they relate to the habitat, species, and proposed management disclosed in the DEIR.

Response to Comment C

That models are not always sufficient to assess impacts is well known. They are however the only feasible and defensible means available to equitably assess impact to multiple species and habitats that may result from multiple management alternatives and extended time frames, all at the scale of a 50,000 acre state forest and adjacent

ownerships. The commenter makes no recommendation regarding a suitable alternative to the methodology employed.

The DEIR relies on a number of models developed by DFG to assess potential impacts to wildlife and habitat, including CWHR and BioView. In particular, the Department consulted with DFG on the use of BioView and species selected for application of that spatial model. Models are an essential tool for conducting a long-term environmental assessment (100-year horizon) for an area as large as JDSF (as well as the even larger assessment area used to examine area-wide and cumulative effects), particularly where the assessment is largely programmatic, rather than project-based. More accurate assessment tools will be applied to conduct project-level assessments for environmental impacts. The DEIR relies only in part on models for its assessment, it also utilizes:

- extensive amounts of data on current vegetation/habitat conditions and the presence of special habitat elements such as snags;
- extensive amounts of information on the status and presence of wildlife species, particularly listed species through DFG's Natural Diversity database and other sources;
- published critical habitat and recovery needs of listed species; and
- extensive amounts of information on species' behavior and habitat requirements.

Comment D

This highlights the need to expand the understanding of the biological resources on JDSF.

Response to Comment D

The Board believes that the information and analysis in the DEIR and RDEIR indicates that the Department currently has a substantial understanding of the biological resources on JDSF. However, the Board also recognizes the need to keep such information current and to expand it wherever feasible. This need is particularly significant for a public research and demonstration forest, such as JDSF. The DFMP and Administrative Draft Final Forest Management Plan (see Chapters 3 and 5) provide information on the kinds of monitoring and survey work that will be done for biological resources on JDSF.

Comment E

Lastly, DFG noted that many literature citations in the text were not included in the references cited section, a number of citations were apparently miss-cited, and some pertinent literature appears to have been overlooked.

Response to Comment E

Due to editing problems, there were a number of errors with the references cited section of the DEIR. A corrected version of the references section is provided in the FEIR.

Part V. Environmental Setting

Comment 1

Page V-4: Other contributing economical pressures for commercial timber management are lower timber volume on the landscape (past harvest practices and younger stands), higher costs of doing business (such as wages, construction and gas prices), and international market competition.

Response to Comment 1

The Board concurs that these factors can serve as disincentives to holding forest land for long-term timber production. While these factors do not directly relate to the potential physical impacts on the environment of the proposed management plan, which is the main focus of the DEIR, they do speak to an important policy issue.

Part VI. Alternatives

Comment 2

Pages VI-35 through 37, Table VI.1 Comparison of Management Approach and Elements Among Proposed Alternatives: Alternatives A, B, and D do not appear to propose the protection and recruitment of sufficiently large blocks of appropriately-placed, late successional forest habitat that would benefit marbled murrelets. These alternatives do not appear consistent with the designation of JDSF as marbled murrelet critical habitat (U. S. Fish and Wildlife Service 1996), nor the recovery objectives and goals of the Marbled Murrelet Recovery Plan (U. S. Fish and Wildlife Service 1997).

Response to Comment 2

The Table VI.1 compares alternatives prior to application of the Contribution to Recovery of Marbled Murrelet Habitat Additional Management Measure. Alternatives B, C1, C2, D and E would be subject to this management measure described on Page VII 6.6-118 in the DEIR. Since alternative A does not involve any timber management, it would passively recruit Murrelet habitat over time. Alternative G, presented in the 2007 Revised Draft Environmental Impact Report (RDEIR) and the Administrative Draft Final Forest Management Plan (FMP) proposed by the Board and based on Alternative G, provides for greater Marbled Murrelet than alternative C1 through the provision of an additional 1,500 acres designated for late seral forest development to recruit marbled Murrelet habitat, plus designation of a 6,803-acre Older Forest Structure Zone.

Federal agencies which propose to fund, authorize, or carry out activities that may adversely modify an area designated as critical habitat must consult with the USFWS. State and private land may be designated as critical habitat under the FESA, but unless a federal nexus exists, the designation does not restrict activities. A federal nexus exists when projects or activities occur on state or private land that require federal authorization, a federal permit, a federal license, or federal funding.

Similarly, federal recovery plan objectives and goals, while considered, do not restrict activities on state or private land management decisions. Take prohibitions relative to marbled murrelets are defined in the federal ESA and are applicable to all alternatives and activities. As this FEIR is being completed, the U.S. and Wildlife Service is contemplating a new designation for Marbled Murrelet critical habitat, including portions of the western part of JDSF. CAL FIRE management of JDSF under the proposed FMP will comply, as required, with the final critical habitat designation when it is made by the Fish and Wildlife Service.

The Board, the Department of Forestry and Fire Protection, and JDSF are keenly aware of the unique opportunity to influence the sustainability and recovery of marbled murrelets. Toward that, end the Contribution to Recovery of Marbled Murrelet Habitat Management Measure and other species protections and habitat recruitment are included in the DEIR and FMP.

Comment 3

Page VI-39, Table VI.1 Comparison of Management Approach and Elements Among Proposed Alternatives: Differences regarding rare plant surveys and species considerations under Alternatives B through E are unclear given the standard CEQA considerations would include all listed measures, including Alterative C1. The distinct differences appear to be the addition of Integrated Pest Management under Alterative C1 and some level (as funding permits) of forest-wide floristic surveys under Alterative F. The Alternatives offer very little management considerations for sensitive plants and, with the exception of Alterative F, none appear to provide for any floristic surveys. This is crucial for ensuring the adequacy of sensitive plant surveys and for developing a sound understanding of the forest flora. Given JSDF's high quality and volume of timber relative to other managed redwood forestlands, DFG recommends that consideration be given to re-directing timber revenues back into the Forest for purposes of providing adequate and consistent funding for the management of roads, recreation, forestry and biological resources.

Response to Comment 3

Table VI.1 (Page VI-39) is a generalized summary. For a more detailed differences the please see the Botanical Resources Section (VII.6.2). Other differences in management approach for alternative C1 includes: Additional Management Measure 1 (see DEIR

page VII.6.2-45 to 46), prioritizing protecting rare plants from invasive weeds and Additional Management Measure 2(DEIR page VII.6.2-46), Mushroom Corners Management area. The Board recognizes that floristic surveys can increase our understanding of non-listed plant occurrences and habitat relationships, and offers an opportunity to detect plant species of concern growing beyond their known or suspected range. In response to comments regarding survey protocol, the RDEIR and FMP will provide this direction, **"For timber harvest plans and other large projects with the potential for negative effects on rare plants, JDSF shall follow the Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (California Department of Fish and Game 2000). In addition, JDSF will conduct periodic floristic survey in some areas to gain a better understanding of the relationships between the local plants, their distribution, and their habitats."**

Any alternative that includes this clarification will contribute incidental floristic surveys of the managed portions of the forest. In the past, CAL FIRE had prioritized additional botanical surveys in botanically sensitive non-timber management areas (example Bob Woods Meadow). This practice could be resumed as staff and funds become available.

Please note that CAL FIRE cannot single-handedly redirect timber revenues back into management of JDSF. All State Forest expenditures must be budgeted and appropriated through the standard administrative and legislative processes that apply to all State departments. However, it should be noted that budget action taken by the State for fiscal year 2006/07 removes all programs except for the Demonstration State Forests from funding under the Forest Resources Improvement Fund, which is the depository for timber harvesting revenues. Further, the budget action taken in the 2006/07 fiscal year also increased the funding and staffing levels authorized for JDSF. However, the authorized spending levels are operative only to the extent that adequate timber harvesting revenues are generated for deposit in the Forest Resources Improvement Fund.

Comment 4

Page VI-53, Table VI.1 Comparison of Management Approach and Elements Among Proposed Alternatives: It is unclear how Alterative B and C1 will differ in management approaches for wetlands. Alternative B cites FPRs and Alternative C1 cites FPRs with “protection of wetland site and integrity and hydrological function”. However, the wetland section of the DEIR does not clarify other management approaches beyond standard FPR’s WLPZ protections measures.

Response to Comment 4
The DFMP, Alternative G, and now the proposed FMP, specify that JDSF will manage wetland habitats in a manner that maintains or restores productivity and contributes to aquatic habitat, water quality, and ecological functions and processes. JDSF will protect wetland site integrity and hydrologic function. In addition, wetlands that meet

the definition of watercourses or reside within stream protection zones will be provided with protection at least to the level specified for Class I and Class II watercourses, including provisions for tree and canopy protection, treatment of soil, and equipment exclusion.
Wetland habitats and local environmental conditions are variable within JDSF. Specific measures applied to achieve stated goals will vary by site and circumstances. A site evaluation and assessment will be conducted as management of areas in proximity to wetlands is planned, and site-specific measures will be implemented to achieve the goals provided in the proposed FMP. Examples of measures that may be incorporated into individual projects include complete avoidance, establishment of buffers, retention of overstory and understory vegetation, directional timber falling, and timber yarding restrictions.

Part VII. Resource Specific Analysis

Part VII.6.1, Aquatic Resources

Comment 5

Page VII.6.1-5: Where stated that, "…*streams in JDSF are primarily confined and therefore generally lack off-channel habitats such as side channels and floodplains that would otherwise provide high-quality overwintering habitat for juvenile coho salmon."* DFG considers flood prone areas that support wetland indicators including mud-lined trees, sand and silt deposits or presence of hydrophytes such as common scouring rush (*Equisetum hyemale* ssp. *affine*) as frequently inundated floodplains and the minimum extent of the riparian zone. Protecting and enhancing riparian buffer zones to protect coho salmon is one of the Noyo River watershed recommendations in the coho salmon recovery strategy (California Department of Fish and Game, 2004). However, a potential contradiction exists regarding the Watercourse or Lake Protection Line (WLTL) and Channel Zone definitions in the California Forest Practice Rules (FPR), which typically leads one to apply the WLTL (the inner boundary of a Watercourse or Lake Protection Zone [WLPZ]) adjacent to the active stream channels and streamward of floodplains[1]; based on delineating the WLTL at the streamside prevalence of 25-year old conifers and hardwoods. These trees typically persist near the active channel, thus, transitioning a watercourse margin here typically separates the active channel from its floodplain (the two are therefore, protected differently). The current FPRs do not necessarily recognize or support recent science-based treatments that suggest combining the active channel and floodplain into a single feature known as the channel zone (Ligon. et al., 1999) or that the separation of the two may result in loss of riparian corridors (and WLPZs placed thereon) from lateral channel migration described in Naiman, et al., 1992; Rapp, et al. 2003; Keller and Swanson, 1979, and noted on DEIR pages VII.6.1-5 and 6. The final EIR should detail how flood prone areas (i.e., the 20-year return interval floodplains) will be identified and managed in the Forest and how will proposed management compliment the goals of coho recovery, insofar as

[1] The level area near a river channel, constructed by the river in the present climate and overflowed during moderate flow events (Leopold, 1994).

recovering properly functioning riparian microclimate, shade and large woody debris recruitment to streams, and the intent of the FPRs to maintain, protect and restore riparian zones (14 CCR § 916)?

Response to Comment 5

This issue was discussed by an interagency team known as the Riparian Protection Committee (RPC) during several meetings held in 2005. The RPC was made up of representatives of DFG (4 representatives), NCRWQCB (3), CGS (1), and CAL FIRE (1). A detailed procedure was developed and agreed to by this committee for flood prone area protection and restoration in the coast redwood region. This process was presented in a final report endorsed by all the participating agencies titled "Flood Prone Area Considerations in the Coast Redwood Zone (November 2005) that is available at: http://www.fire.ca.gov/php/rsrc-mgt_content/downloads/RiparianProtComWhitePaperfinal.pdf.

The agencies jointly presented this report to the Board of Forestry and Fire Protection at their November meeting in Sacramento. In summary, the basic procedure agreed to by the agencies, including DFG, was to:

- Inventory flood prone areas for all of the hydrologic, geomorphic, and biological functions present that may be affected by proposed timber operations.
- Determine the category of inundation of the flood prone area proposed for management.
- Conduct an appropriate analysis for the functions present in light of possible significant adverse impacts from management.

The RPC report states that disclosure and analysis requirements increase with increased risk associated with the proposed level of activity and with the increased frequency of inundation of the flood prone area. The agreed-to procedure specifically states that management proposed within the 20-year recurrence interval floodplain with anadromous fish habitat (including restorable habitat) requires detailed analysis. Further, the RPC report states that while using the 25-year-old tree Forest Practice Rule for defining the WTL and the start of the Class I WLPZ for unconfined channels may provide for adequate amounts of shading and large wood recruitment with laterally stable channel systems, the other floodplain functions must also be considered—which may require expansion of WLPZ beyond 150 feet and inclusion of other mitigation measures as necessary. It also states that in laterally unstable channel systems with active channel migration zones and/or active bank erosion, standard WLPZ widths will not be appropriate for flood prone areas.

The Final EIR will include language indicating that the evaluation of flood prone areas within JDSF will be guided by procedures included in the Riparian Protection Committee's Final Report, which was produced by a committee that included several DFG biologists and was endorsed by DFG. This approach is incorporated in to the proposed FMP.

Comment 6

Page VII.6.1-10: According to Benda and others (2002) and Benda and Associates [2004 (a, b)], low gradient channels with floodplains, bank erosion and tree mortality are usually more important than landslide features as a wood recruitment mechanism. It should be noted that these studies were based on chronic wood input modeling (such as delivery from tree mortality, longevity of wood in the channel, distance and direction of tree fall, and wind-throw or gradual undercutting of root systems) and assumed that most large woody debris (LWD) originates from a set distance from the channel; such as the 90% wood recruitment originating from within 33 feet of the bank in Benda's second growth study sites. Subsequently, these studies did not consider the fact that a majority of wood input and output tends to be episodic (i.e., delivery from windstorms, floods, fires or landslides) and not constant or chronic. Episodic wood input has been shown to account for most of the tree fall and wood delivery in streams (Naiman, et al. 2000). This may explain why the volume of wood with sources that could be identified in Benda (2002) was low (mean 27%) in the old growth study segments. It is, therefore, important to explain that wood recruitment distances vary tremendously on spatial (e.g. hill slopes vs. active floodplain sources) and temporal scales (e.g. time to grow mature [300-400 years old] redwoods vs. young second growth (60-80 years old) in the riparian zone.) Moreover, management guidelines that are predicated on these types of models (especially if data is collected from small streams absent active floodplains) for set distances of wood recruitment will likely result in underestimating riparian zone protection required to provide long-term instream wood for medium to large streams. Thus, these guidelines may not sufficiently support the intent of the Forest Practice Rules to maintain, protect or recover riparian zones depending on their conditions. DFG recommends establishing the WLTL at the outer boundary of a watercourse's 20-year return interval event floodplain to avoid losing instream large woody debris or recruitment potential, where lack of this value is a primarily limiting factor. The area between the WLTL should then be defined as the channel zone where timber harvesting would be directed to improve salmonid habitat through the limited use of the selection or commercial thinning silvicultural methods with review and comment by DFG. Alternatives C1 and C2 propose compliance with the FPRs plus additional equipment limitations and no-cut zones for Class I and Class II watercourses (according to DEIR pages VI-29 and 31). It appears that Alternatives D-F with their Riparian Management Zones will provide the best protection for watercourses and floodplains insofar as minimizing impacts to large wood recruitment because it provides guarantees that late seral habitat will be developed in the riparian zones and will compensate for the FPR's separation of the active channel from floodplains with FEMAT-based watercourse buffer widths.

Response to Comment 6

The DFMP (page 70) specifically states that timber operations within channel migration zones will not occur (except as allowed in the Forest Practice Rules). And, as stated above in the response to Comment 5, if management is proposed within a watercourse's 20-year recurrence interval event floodplain. **CAL FIRE will use as a**

guide in the evaluation of potential flood-prone areas the procedures developed by a multi-agency team that included DFG and is described in the final report titled "Flood Prone Area Considerations in the Coast Redwood Zone (Cafferata and others 2005). This will specifically be stated in the FEIR. This approach is incorporated in to the proposed FMP.

With the use of the procedures included in the Riparian Protection Committee's Final Report, along with the Threatened or Impaired Watershed Regulations and WLPZ prescriptions included in the proposed FMP, the FMP will provide for long-term protection and restoration of riparian functions in flood prone areas found within JDSF. Note also that alternatives C1 and C2, like alternatives D-G and the FMP do provide for the recruitment of late seral habitat in the stream buffer zones (see DFMP pages 70-71 or FMP Chapter 3).

Comment 7

Page VII.6.1-11: Where stated, *"However, reduced levels of detrital input into streams attributable to streamside timber harvesting is somewhat offset by concomitant increases in detritus production within stream channels (primarily dead algae and other aquatic plant debris)…"*, is there a specific reference for this comment because first order streams (such as Class III watercourses) contain little algae and aquatic plants present to offset reduced detrital levels from streamside timber harvests (Clare Golec, Botanist with DFG, pers. comm.. February 2006); therefore, detritus production in headwater streams is primarily dependent on riparian vegetation and emergent wetland plants. FPRs do not require post harvest overstory canopy retention for Class III watercourses, unlike Class I and Class II watercourses that also receive large woody debris protection measures. Yet, because of their dendritic pattern in typical watersheds, Class IIIs often comprise a large proportion of the stream network and are therefore considered important for maintaining ecosystem integrity (Sheridan, 2003). Since Alternatives C1 and C2 propose compliance with the FPRs plus additional equipment limitations regarding Class III watercourses (according to DEIR pages VI-32 and 33), it appears that Alternatives D-F with their Riparian Management Zones provide the best protection for Class III watercourses insofar as minimizing the rate of nutrient removal from headwater streams, the products of which indirectly benefit coho, tailed frog, southern torrent salamanders, etc.

Response to Comment 7

A specific reference for the statement "*However, reduced levels of detrital input into streams attributable to streamside timber harvesting is somewhat offset by concomitant increases in detritus production within stream channels (primarily dead algae and other aquatic plant debris)" is* Bottroff and Knight (1996) [as stated in the following paragraph], who reported on the impacts of timber harvesting in the North Fork of Caspar Creek under the modern Forest Practice Rules. The paragraph in the DEIR referred to in this comment does not refer to specifically to unbranded, first order, ephemeral streams

classified as Class III watercourses under the California Forest Practice Rules, therefore, the comments regarding Class III watercourses are not directly applicable. Rather, the paragraph applies to second and third order channels, as are found in the North Fork Caspar Creek study reaches reported on by Bottroff and Knight (1996).

The Board agrees that Class III watercourses comprise a large percentage of the stream network within JDSF and are important for maintaining ecosystem integrity. The DFMP on page 70 (or proposed FMP in Chapter 3) describes that Class III "Bank stability will be promoted by retaining vegetation, establishing equipment exclusion zones (EEZs) or equipment limitation zones (ELZs) along watercourses, and prohibiting ignition of prescribed fire near watercourses." Additionally, site-specific investigation at the project level will be used to determine mitigation needed for adequate protection for small Class III channels. The appropriate mitigation for small channels varies greatly based on channel gradient, side slope steepness, soil type, mass wasting hazard, amount of bedrock exposure, and erodibility of the streambanks. Adequate protection measures will be applied following site investigations by qualified individuals, and where appropriate, protection measures may include canopy retention. Therefore, Class III watercourse-specific concerns will be addressed at the project level during THP preparation in part through the application of the Forest Practice Rules.

Comment 8

Page VII.6.1-14: The DEIR cites the study by CH_2M-Hill and Western Watershed Analysts (1999), which reported that nearly 80% of cumulative riparian shade effectiveness is reached within approximately 0.5 site-potential tree heights vs. the generalized curve presented by FEMAT (1993), which suggests that cumulative effectiveness for shading approaches 100% at a distance of, approximately, 1.0 tree height from the stream channel. Why are two different percentages compared, such as 80% for the Steinblums and others 1984 (ACD) curve vs. 100% for the FEMAT curve? The Riparian Shade Effectiveness “FEMAT” Curve reaches 100% at 1.0 tree height and the Steinblums and others 1984 (ACD) curve is not much lower at, approximately, 95% at 1.0 tree height. Additionally, why is 80% cumulative riparian shade effectiveness chosen as a curve comparison point as opposed to 100% if the point is not to further impair, but instead, restore impaired watercourses and riparian zones? Alternatives D-F with their Riparian Management Zones appear best suited to provide adequate shade to stream because the RMZs provide better guarantees for late seral habitat development in the riparian zones, which is critical to coho recovery (California Department of Fish and Game, 2004), while more effectively avoiding substantial effects on any portion of riparian habitats by utilizing the FEMAT-based watercourse buffer widths.

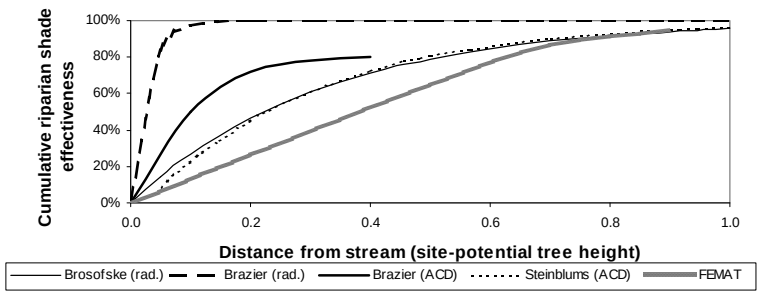
Response to Comment 8

The main reason for including the CH2M-Hill and Western Watershed Analysts reference to 80% cumulative riparian shade was to illustrate that the correct shape of the curve is curve linear, not nearly straight as shown in the FEMAT figure (see below).

The data and curves from the referenced studies in the CH2M-Hill and Western Watershed Analysts report were not found to fit the FEMAT shade relationship.
In other words, most of the cumulative shading benefit is derived from the trees that are present in the first 0.5 site potential tree height from the channel (approximately 80%). Class I WLPZ widths are stated in the DFMP as being 150 in width, with zone widths expanded where appropriate. Over the past several years, zone widths applied on JDSF have periodically exceeded the minimums stated in the DFMP and proposed FMP and the Forest Practice Rules. As stated in the DEIR, Steinblums and others (1984) found that an angular canopy density (ACD) of approximately 100% can be achieved by buffer strips greater than 125 feet.

The DFMP, Alternative G, and the proposed FMP specifically state that properly functioning riparian and stream ecosystems will be protected or restored by managing forest stands in watercourse and lake protection zones (WLPZs) to promote their ecological succession to late-seral forest conditions.

Figure 4-1. Riparian Shade Effectiveness



Comment 9

Page VII.6.1-15: The DEIR cites the James (2003) study of streamside microclimate and stream temperature in the Sierra Nevada region, which revealed that clearcuts had no discernable impact on microclimate within 40 feet of the stream bank. This example is possibly misleading when it's compared to coastal watersheds, where streams do not receive water temperature-ameliorating effects such as snow pack and associated cold water run-off in the Sierras. A caveat should be added to the James 2003 study discussion to inform the reader about how such narrow stream buffers might be appropriate in the Sierra setting, but might not be appropriate in the coastal watershed setting (see Ledwith,1996, which is perhaps a more appropriate microclimate setting comparison). For JDSF, it is likely that water temperature-ameliorating effects are more effectively achieved by tall-tree shade, which approaches 100% at one site potential tree height according Steinblums and others, 1984. One site potential tree height (the expected height of coniferous trees upon maturity at 200 years) on a high-site coastal

California redwood forest is, approximately, 165-220 feet when utilizing mature redwood trees as opposed to young growth (50-60 year old) redwoods, resulting in a buffer that's at least four times wider than the James 2003 buffer width results.

Response to Comment 9

The Board agrees with DFG that the work conducted by Dr. James in the Judd Creek watershed in Tehama County may not be directly applicable to the coast redwood region in western Mendocino County. **The FEIR will state that studies such as those by Ledwith (1996) may be more likely to represent conditions found on JDSF than those reported on by James (2003).**

Ledwith (1996) studied air temperatures and relative humidities in riparian zones at two sites that had been clearcut with buffers in the Six Rivers National Forest. Air temperatures above the stream increased exponentially with decreasing buffer width, with a 6.5^{o} C increase in mean air temperature along the riparian zone between the 150 m (~500 ft) and 0 m buffer width sites. Ledwith (1996) concluded that buffer strips wider than 30 m (~100 ft) will still affect microclimate in the riparian zone, but at a lower rate of change than narrower zones (e.g., 1° C or 2° C), and that buffer strips at least 30 m (~100 ft) wide are necessary to avoid significant impact to riparian environments. Brosofske and others (1997) concluded that a buffer at least 45 m (~150 ft) on each side of the stream is necessary to maintain a natural riparian microclimatic environment along streams in western Washington. Their study site was characterized by moderate to steep slopes, 70–80% overstory coverage (predominantly Douglas-fir and western hemlock), and clearcut silviculture outside the buffer.

Class I WLPZ widths are stated in the DFMP and proposed FMP as being 150 in width, with zone widths expanded where appropriate.

The Board is aware that DFG is currently examining riparian zone microclimates within coastal redwood areas in western Mendocino County with a comprehensive study. Specifically, summer (May through September) temperature gradients are being monitored along fifteen transects in stream riparian zones within four different watersheds. A minimum of seven stations are set along each transect. With the exception of a control transect within the Russian Gulch State Park, all watercourses in this study are within JDSF. At two watersheds, temperature is measured at each station. At two other watersheds, temperature and relative humidity are measured. This study is part of a larger study to detect changes in riparian microclimate as a result of timber harvest. Post-harvest data will be studied by CAL FIRE and used for adaptive management purposes.

Comment 10

Page VII.6.1-20: Where stated that "*Incised channels, even where the stream is not confined within the valley bottom, have little or no connectivity between channels and*

floodplains, and typically provide very little off-channel or side-channel habitat capable of providing low-velocity refuge during high flow events." It is further stated that, *"Confined channels make up 97 percent (184 mi or 296 km) of the classified Class I stream length in the JDSF Proper assessment area."* This implies that most Class I streams in the JDSF either don't have floodplain connectivity and, where they do, they're of little aquatic habitat importance. Regarding connectivity, the flood of December 31, 2005 was an, approximately, 10-year return interval (RI) flood event (i.e., frequent flood compared to Noyo River gaging station's history of peak flows) and evidence of floodplain connectivity and landward extent (as much as 100 feet) on the SF Noyo is obvious (sand, silt and debris deposits) near the confluence with the Noyo River. Big River's floodplains (near the Two Log Creek confluence) were under floodwaters for approximately 20 hours according to the nearby USGS gaging station (estimated to have been a 20-year flood RI based on its location between Caspar Creek [8-12 year RI], and the Navarro, [approximately 20-year RI]). Did the Stillwater Sciences 1997 assessment utilize gaging station data to estimate the approximate stage-height of a 20-year flood RI as part of their field verification of channel confinement and floodplain connectivity estimates? DFG considers the 20-year RI floodplain and the active channel as the most biologically critical area, based on coho salmon life cycle requirements (CDF 2005) and the minimum extent of channel zone habitat necessary for protection, maintenance and recovery of coho populations in the North and Central Coast regions. Splash damming is mentioned in the DEIR as a causal factor in channel incision and should be acknowledged along with the Stillwater Sciences reference that, in part, the lack of connectivity is most likely artificial. However, stream channel and riparian zone recovery will likely result in these floodplains becoming more temporally and spatially connected. A re-assessment of channel confinement, following the recent flood, will likely reveal much greater floodplain connectivity with Class I active channels than is suggested in the DEIR.

Response to Comment 10

The FEIR will be corrected and state that Stillwater Sciences (1999) found that 89% of the Class I channel length (that could be classified with air photos) was classified as confined, and that unconfined channels with gradients less than 2% (assumed to have the most valuable aquatic habitat for anadromous fishes) made up 3% of Class I channel length for the JDSF assessment area used by Stillwater Sciences.

Stillwater Sciences did not use gaging station data to estimate the approximate stage-height of a 20-year flood RI as part of their field verification of channel confinement and floodplain connectivity estimates. Rather, as stated in the draft JDSF HCP/SYP document, Stillwater Sciences' work was completed with air photograph analysis and a DEM GIS layer for channel gradient classes (0-1%, 1-2%, 2-4%, 4-8%, and >8%). Field verification work was conducted to check this office-based analysis.

If there is field evidence of floodplain connectively for storm events with return intervals of 20 years or less in areas that are proposed for timber management,

CAL FIRE will be guided by the guidelines developed by CDF, DFG, NCRWQCB, and CGS in the document titled "Flood Prone Area Considerations in the Coast Redwood Zone (November 2005). See response to Comment 5 above.

The Board agrees with DFG that: (1) the lack of connectively between floodplain and channel for the very limited Class I channel lengths that are unconfined and have channel gradients less than 2% are to a large extent related to legacy management impacts (i.e., historic logging practices), and (2) stream channel and riparian zone recovery will likely result in these floodplains becoming more temporally and spatially connected over long time periods. For example, in the lower reaches of the North Fork Caspar Creek channel, splash dam logging disconnected the channel, but over time with large wood input, the channel will begin to reconnect (T. Lisle, USFS-PSW, Arcata, pers. comm.).

Comment 11

Page VII.6.1-22: Figure VII.6.1.2, Sediment in Pools (V*) at Noyo River and Nearby Stream Sites (1992), appears to be missing sampled stream names on the ordinate, for example, between Kass and Parlin Creeks.

Response to Comment 11

The Board agrees that this Figure does not display all the required stream names. The following correction will be added to the FEIR. "In Figure VII.6.1.2, the indicated stream names, from top to bottom, should be Hare Creek, Kass Creek, Pudding Creek (outside of assessment area), Parlin Creek, Brandon Gulch, North Fork of the South Fork of Noyo Creek, South Fork Caspar Creek below the weir, North Fork of Caspar Creek below the weir."

Comment 12

Page VII.6.1-38: Repetitive references to past stream clearing by DFG (e.g., under the heading of *"Big River watershed-Mendocino Redwood Company-Stream Habitat Assessment"* and particularly the last paragraphs on pages VII.6.1-46 and 1-84) should be explained in more context including logging history, which necessitated the clearings in the first place (there is some mention of this for Caspar Creek on page VII.6.1-35.) In the past, logging-related debris jams were deliberately caused by pushing wood debris into streams for crossings and streamside landings. As mentioned in the DEIR, splash dams were also built (circa 1860s-1930s) in some watersheds such as Big River and Caspar Creek to drive logs downstream. By design, splash dams blocked water and fish passage while in use and after log-drives when the dams were abandoned, many still intact. DFG and others recognized (in the early 1960s) that removing and/or modifying logging-related fish impasses was important because it didn't matter how much wood was present in spawning and rearing habitats if fish could not get access to

the habitat. At some locations, well intentioned efforts to provide fish passage may have removed too much wood to the detriment of fishery rearing habitat. However, past debris removal practices should be discussed with the acknowledgement that past logging activities initiated the need to clear streams of wood in order to re-establish migration for salmon and steelhead. Explaining this fact in context of the DFG stream clearings will provide readers with a more complete account of why in-stream wood is, in part, lacking in some JDSF streams.

Response to Comment 12

Per the literature, much of the wood removed by DFG was not actually a barrier to fish passage. See, for example, Holman and Evans (1964), who documented stream clearance work in the Noyo River watershed in the 1960s. A total of 36 miles of stream were cleared by 1964. They identified 296 log jams on 16 Noyo River tributaries and removed them over two years to "improve" over 36 miles of stream. All these tributaries contained many log jams ranging in size up to 200 feet long and 50 feet wide. This was done with the best intentions of improving the habitat for salmonid species. However, of the logs removed from the Noyo, only 5% were barriers to upstream migration to fish. The remainder of the debris removed was classified as partial barriers (40%) or potential barriers (55%). Removal of log jams released huge quantities of stored sediment in some locations and resulted in channel degradation of several feet. The authors stated that "Contrary to popular belief, the principal benefit of log jam removal is not removal of impassable barriers. It is improvement of habitat by permitting scouring winter flows to remove silt and gravel deposited behind log jams. It is believed that both spawning conditions and food production are thus improved for anadromous fishes."

Comment 13

Page VII.6.1-91: It's stated that, *"Timber operations within channel migration zones will not occur (except as allowed in the Forest Practice Rules*)". What is the definition of a Channel Migration Zone?

Response to Comment 13

CAL FIRE will use the definition for channel migration zone agreed to by the Riparian Protection Committee and provided in the final report titled "Flood Prone Area Considerations in the Coast Redwood Zone (November 2005). It is:

> Channel migration zones (CMZs) are areas where the active channel of a stream is prone to move, resulting in a potential near-term loss of riparian function and associated habitat adjacent to the stream, except as modified by a permanent levee or dike. For this purpose, near-term means the time scale required to grow forest trees that will provide properly functioning conditions.

Comment 14

Page VII.6.1-91: it is stated that, *"Within Class I and Class II WLPZ, retain a minimum of 240 sq. ft. conifer basal area following completion of timber operations"*. How will this strategy meet Forest Practice Rule 897 [Implementation of Act Intent (b)(1)(C)] to *"Retain or recruit late and diverse seral stage habitat components for wildlife concentrated in the watercourse and lake zones and as appropriate to provide for functional connectivity between habitats"*. Contrast this with the fact that the Forest Practice Rule's WLPZs are typically managed under selection silviculture for tree growth where the largest trees can be removed at the end of every growth cycle. Without additional requirements to allow trees to recruit into larger diameters, these areas will not contribute the type of large wood that historically formed the large woody debris and late seral components in the riparian zone. Alternatives D-F, particularity Alternative D developed from recommendations of the JDSF Citizen Advisory Committee, appear to meet this goal most effectively with their protected riparian zones for all watercourses using harvest limitations similar to the methods described in FEMAT (1993). Management that's designed to establish late successional habitat will likely guarantee sources of large wood as riparian zones develop late-seral habitat (noted on page VII.6.1-37).

Response to Comment 14

The entire list of DFMP measures provided on page VII.6.1-91 needs to be considered in assessing how WLPZ structure and composition will be affected by the DFMP. The listed measures also call for:

- a 25-foot no-cut buffer;
- leaving the 10 largest trees per 330 feet of stream channel within 50 feet of the watercourse transition line;
- overall management to promote WLPZ succession to late-successional forest conditions.

Combined with these measures, leaving a minimum of 240 square feet of conifer basal area, along with the largest trees, after every harvest will allow the forest to grow older and larger over time with associated complex characteristics of late seral stage. This type of harvest is characterized as a light thinning from below. There is solid evidence to support the assertion that biomass accumulates on the site over time if you leave 240 square feet of basal area is retained [see the modeling results presented in Section 5 of the "Flood Prone Area Considerations in the Coast Redwood Zone Report (November 2005)—found at:
http://www.fire.ca.gov/php/rsrc-mgt_content/downloads/RiparianProtComWhitePaperfinal.pdf].

Note that the WLPZ measures represent minimum, programmatic standards that are commonly adjusted based upon local conditions during further management planning

and the THP preparation and review process. These measures would not be adjusted below the minimum standards specified in the DFMP. On JDSF, it has been and is expected to continue to be a very common practice to leave Class I and II WLPZs uncut. It is inappropriate to presume that CAL FIRE plans to cut to the minimum everywhere, and all during the next 10 years.

It is important to note that the minimum 240 square feet requirement is conifer only (DFMP page 64). The inner 25-foot zone will remain uncut and the canopy level is 70%+ throughout the zone, which is likely to be similar with old-growth forest canopy levels on hillsides. When combined with 240 sq ft or more of conifer basal area, expected canopy levels should actually be much higher than 70% virtually everywhere within the zone. All hardwoods, snags, and down logs are to be retained over time, adding to the canopy and basal area levels.

The modest harvest that can occur will be done to accelerate development of multi-storied canopy, while retaining many of the largest trees and allowing them to increase their size. Harvest can occur only once per 20 years, so CAL FIRE has the potential to harvest no more than once during the expected life of the plan. Therefore, the late seral development will continue and we will utilize adaptive management to adjust parameters based upon site specific conditions.

Note also that the DEIR includes the Additional Management Measure for Large Woody Debris Survey, Recruitment, and Placement, to be applied to alternatives C1 and C2 (DEIR page VII.6.1-97 to -98). The additional management measure will provide further assurances that adequate levels of LWD will be provided to promote recovery of aquatic habitat features and functions.

The discussion above regarding the DFMP also is applicable to the Alternative G and the proposed FMP.

Comment 15

Page VII.6.1-102: The impact evaluation of the DFMP (alternative C1) and alternative C2 is based on using standard FPRs [14 CCR 916.9(i)] for LWD recruitment with the addition of 25-foot no-cut zones in the inner WLPZs and additional silviculture considerations. This is a good strategy to employ especially when WLPZs are placed at the base of hill slopes as opposed to inner floodplain margins because WLPZs are subject to natural destruction from lateral channel migration in addition to high winds that penetrate both streamward and landward of WLPZ edges (Reid and Hilton 1988). In 1999, a Scientific Review Panel (SRP) of scientists was created to undertake a comprehensive review of the California Forest Practice Rules (FPRs) regarding their adequacy to protect salmonid species (Ligon and others 1999). The SRP concluded that the FPRs, including their implementation (the “THP process”) did not ensure protection of anadromous salmonid populations. The SRP recommended that the watercourse and lake transition line (WLTL) be placed <u>outside</u> of active floodplains (20-

year return interval, Bill Trush, pers. comms, 2004). Furthermore, the SRP reasoned that the river channel and floodplain inseparably comprise a stream (the channel zone) and recommended that it neither be harvested nor considered a zone for LWD recruitment. The SRP then opined that if the channel zone or WLTL definitions were modified, the WLPZ widths would have to be re-evaluated. The SRP also made specific rule recommendations such as redefining the watercourse transition line to include the flood plain: *The watercourse transition line is the outer boundary of a watercourse's floodplain as defined by the following: (1) the upper limit of sand deposition; and, (2) evidence of recent channel migration and/or flood debris. The first line of permanent woody vegetation must not be used to determine this transition line.* The current FPR's definition and interpretation of the WLTL uses the first line of woody vegetation to determine the watercourse transition line for unconfined channels. It appears that future JDSF THPs will use the FPR definitions for determining the WLTL. Considering this, DFG recommends that the JDSF management plan instead use definitions recommended by the SRP to improve protection and recovery of salmonid populations.

Response to Comment 15

Please see our responses to Comments 5, 6, and 14.

Comment 16

Pages VII.6.1-106 and 107: Regarding Impact 3a: Riparian Forest Extent and Quality, the watercourse and lake protection zone's (WLPZ) measures in Alternative C1 and 2 are not adequately explained when compared to Alternatives D, E and F. Thus, it is difficult to evaluate potential project impacts. If Alternatives D-F provide enhanced riparian protection above minimum Forest Practice Rules, plus what's provided in the Alternative C1 and C2, then choosing alternatives D-F is preferred because the Forest Practice Rules do not recognize all critical salmonid and riparian habitat protection measures recommended in the 1999 SRP. In addition, the DFMP does not appear to compensate for where the FPRs fall short in protecting streams and rivers recommended in current literature.

Response to Comment 16

Please see our responses provided for Comments 5, 6, and 14 above.

Part VII.6.2 Botanical Resources

Comment 17

Part VII.6.2.1, Setting: The DEIR should include in the vegetation series, Douglas-fir – Tanoak Series, which incorporates the CNDDB/Holland vegetation types Broadleaved Upland Forest (in particular Mixed Evergreen Forest and Tanoak Forest) and North

Coast Coniferous Forest. The Redwood Series is considered to only incorporate the CNDDB/Holland vegetation types North Coast Alluvial Redwood Forest, Alluvial Redwood Forest, and Upland Redwood Forest. Generally this vegetation series forms a mosaic with the redwood series, occupying the more exposed aspects of ridgelines and upper slopes.

Response to Comment 17

The Board recognizes that the DEIR's description of the redwood series does not strictly conform to the CNDDB/Holland hierarchical classification or to the series described in Sawyer & Keeler-Wolf. The objectives for these two works are to describe vegetation throughout California and to help locate and determine rarity of vegetation types (CNDDB 2003).

Sawyer & Keeler-Wolf's key is written for on-the-ground classification of a specific stand. Series descriptions include common plants present. For both CNDDB and Sawyer & Keeler-Wolf's, the association names are the only source of species information web reference. A summary of the pertinent CNDDB and Sawyer & Keeler-Wolf hierarchical classification follows:

- Coastal and Montane Douglas- Fir Forests and Woodlands
  - Douglas Fir Forests (redwood common per Sawyer & Keeler-Wolf).
    - Various associations which include species considered to be associated with costal forests (CNDDB lists no associations with redwood listed in the name)
    - Various Douglas-Fir associations including more montane species such as White Fir. (CNDDB, Sawyer & Keeler-Wolf)
  - Douglas-Fir/Tanoak Forests (redwood not common per Sawyer & Keeler-Wolf, CNDDB lists no associations with redwood listed in the name)
- Coastal and Montane Redwood Forests
  - North Coast Alluvial Redwood Forest (Sawyer & Keeler-Wolf)
  - Upland Redwood Forest
  - Various Redwood & Douglas-Fir or, tanoak or madrone CNDDB associations

JDSF upland forest vegetation descriptions have utilized a gradient approach. The majority of these forests have a substantial disturbance history and contain a mix of conifer, hardwood and understory species. Stands that have been typed as dominated by hardwoods have either or both Douglas-fir or redwood present in the stands. The JDSF gradient approach is listed below.

Coniferous Upland Forest and Woodland.

- Redwood dominated
- Redwood /Douglas-fir
- Redwood /Douglas-fir/Hardwood
  - Redwood/Douglas-fir / Hardwood xeric

Conforming with the CNDDB/Holland hierarchical classification format would require CAL FIRE to reformat the entire descriptions in the EIR. The change would locate the Redwood/Douglas-fir/Hardwood xeric type in the Douglas-Fir Forests series per Sawyer & Keeler-Wolf. This would not add new information to the document. Neither the Douglas-Fir nor Douglas-Fir/Tanoak associations are considered rare vegetation.

The FEIR will not duplicate all the descriptive and background text from the DEIR, they are incorporated by reference. CDFG comments include extensive comments intended to make additions to the DEIR text that do not represent changes or corrections of fact. Where changes or corrections are appropriate these will be incorporated into the FMP or the Errata found in the FEIR. Some additions will occur as well to expand understanding of specific resources.

The FEIR Errata will include the description of the Douglas-fir series and explain the relationship of the JDSF types to the Sawyer & Keeler-Wolf types. This will present information to individuals who understand CNDDB/Holland hierarchical classification.

The upland vegetation type in the Redwood/Douglas-Fir/Tanoak forests is common in the redwood region and designation by one term or another does not modify the significance of information presented in the DEIR.

Comment 18

Page VII.6.2-2: Other communities or series in the redwood region should include coastal scrub, willow riparian forests and woodlands, native grassland and non-native grassland.

Response to Comment 18

The Board recognizes this information; however the DEIR was not intended to be encyclopedic with regard to plant communities of the redwood region.

Comment 19

Pages VII.6.2-2 and 6.2-8: Discussions on rare or sensitive vegetation types and Bishop pine forest should include Northern Bishop Pine Forest as a sensitive vegetation type. The Northern Bishop Pine Forest is very limited in distribution and is often poorly understood when within its range.

Response to Comment 19

This information will be included in the Errata. Also see response to Comment 29.

Comment 20

Page VII.6.2-7: Please note the correct spelling of *Cupressus goveniana* ssp. *pigmaea*, and sensitive plants frequently associated with Mendocino pygmy cypress forest are:

Rare Species:

1. *Arctostaphylos mendocinoensis* pygmy manzanita
2. *Boschniakia hookeri* small groundcone
3. *Campanula californica* swamp harebell
4. *Carex californica* California sedge
5. *Cupressus goveniana ssp. pigmaea* pygmy cypress
6. *Juncus supiniformis* hair-leaved rush
7. *Lilium maritimum* coast lily
8. *Pinus contorta* ssp. *bolanderi* pygmy pine
9. *Rhynchospora alba* white beaked-rush
10. *Usnea longissima* long-beard lichen

Uncommon/Unique Species:

1. *Calamagrostis bolanderi* Bolander's reed grass
2. *Ceanothus gloriosus var. exaltatus* glory brush
3. *Cladina portentosa ssp. pacifica* Pacific reindeer lichen
4. *Cornus Canadensis* bunchberry
5. *Sphagnum* sp. peat moss
6. *Veratrum fimbriatum* corn lily

Response to Comment 20

The spelling error will be corrected in the FMP. The document attempts to balance presenting critical information needed without adding encyclopedic information. The rare species listed in the Pygmy Cypress series included those strongly identified with the pygmy. There are other rare species that are associated with the pygmy and other habitats. Because rare plants can unitize several vegetation types or series; including lists of rare species under each vegetation series description on pages DEIR VII.6.2-7 would be repetitive and duplicate information offered elsewhere. Information on rare plant habitat preferences is located in DEIR Appendix 7B-2.

The errata will include the addition of the list of "Uncommon/Unique Species" as additional information on the pygmy forest .

Comment 21

Page VII.6.2-9: Please note tree gaps are another important natural event that creates micro sites in the redwood forest.

Response to Comment 21

The Board agrees that canopy species mortality including disease or senescence is a natural factor that creates microsites or gaps.

Comment 22

Page VII.6.2-9: Another important forest community component beside fungi (please note lichens are in the Kingdom of *Fungi* under the Division *Mycomycota*) are the bryophytes (mosses, liverworts, and hornworts), which aid in soil and nutrient retention through reduction of surface erosion and absorption of nutrients and water during rains. In addition, there are three rare mosses identified in CNDDB Rarefind database for Mendocino County (although not in the vicinity of JSDF). The distribution and rarity within this taxonomic group is poorly understood. Information pertaining to this group would benefit by encouraging inventories and academic studies in JSDF.

Response to Comment 22

The Board recognizes that bryophytes are a topic of interest for potential research at JDSF. The comment did not propose any adverse effect to this group, validating that inclusion of bryophytes in the analysis process was not necessary.

Comment 23

Page VII.6.2-12: May want to reference the taxonomic reclassification (change of genus) for Cape ivy (*Delairia odorata*), this name is noted in Appendix 7B Botany. Also correct generic scientific name for pennyroyal (*Mentha* vs. *menthe*).

Response to Comment 23

The spelling and name changes will be noted in the Errata.

Comment 24

Page VII.6.2-14: Table VII.6.2.1 should include marsh pea (*Lathyrus palustris*), a sensitive plant range extension from Humboldt County to the Garcia River Watershed in Mendocino County. This species was located in a redwood forest opening wetland in association with redwood, Douglas-fir, tanoak, *Baccharis pilularis*, *Athyrium felix-femina*,

Carex aquatilis C. hardfordii, *C. gynodynama*, and *Juncus patens* (pers. com. Heise 2005).

Response to Comment 24

The Board recognizes this list is dynamic and additions and subtractions will be ongoing as knowledge of rare plants improves. In subsequent discussions with DFG Botanist Clare Golec, she recommended this addition not be made, as the recent local detection of species was in question this time. ***Latyrus palsustris* will not be added at to the list at this time.** The list will continue to be updated to reflect current knowledge.

Comment 25

Page VII.6.2-1214: Table VII.6.2.1 should cite the State ranks for the species as many of these species also have State sensitive status (in particular S1 and S2 ranks). Another relevant rank is the global rank, which is similarly assigned as the State rank but is reflective of the world status. The State ranking system is a separate system for assigning status and provides additional status information for a species.

Response to Comment 25

The FMP will contain an updated table which adds state and global rank.

Comment 26

Page VII.6.2-15: Table VII.6.2.2. should be revised and updated to <u>exclude</u>: *Calamagrostis foliosa*, *Ceanothus gloriosus var. gloriosus*, *Collomia diversifolia*, *Hemizonia congesta ssp. tracyi*, *Linanthus acicularis*, and *Ribes victoris*; and <u>include</u> *Lotus formosissimus*.

Response to Comment 26

The Administrative Draft Final Forest Management Plan will contain an updated table with additions and deletions.

Part VII.6.2.2, Regulatory Framework for the Protection of Botanical Resources

Comment 27

Page VII.6.2-17: CEQA also provides for assessment of regional rare and unique species [CEQA § 15125(c)]. Also state rank is an important status factor in assessing whether a species meets the criteria of rare, threatened, or endangered under Section 15380 CEQA Guidelines.

Response to Comment 27

This information will be added in the Errata as information on rarity status evaluation.

Comment 28

Pages VII.6.2-17 and 18: The Native Plant Protection Act (NPPA) does not exempt timber operations from the California Endangered Species Act, CEQA, or the Forest Practice Act (Weburg Case 2003). The unmitigated salvaging of a rare or endangered plant would likely be considered a significant impact under CEQA. In addition, the NPPA does not apply to species not listed by the Fish and Game Commission as threatened, rare, or endangered. Hence application of the NPPA Section 1913 is not appropriate for determining the need to adequately assess sensitive botanical resources in the THP process. The most pertinent NPPA exemptions are prohibition of take and Fish and Game Code Section 2081 take permit.

Response to Comment 28

The commenter is correct in stating that a THP or CEQA document must still consider the potentially significant effects to any species regardless of the exemption or whether the species is listed or not. We believe that the DEIR text already alludes to this in the partial paragraph found at the top of DEIR page VII.6.2.18:

> Regardless of the exemption allowed to THPs under Fish and Game Code Section 1913, it is the stated intent of JDSF to address sensitive plants and their habitats on a project basis through scoping in consultation with CDFG, surveys according to appropriate survey guidelines where indicated by the results of scoping, assessment of potential impacts, and avoidance or mitigation to reduce impacts to a level less than significant.

To clarify the DEIR with respect to the issue raised in this comment, the FIER Errata will note this correction and therefore modify the DEIR. Inclusion of this section without notes on the Weburg Case represents an artifact of editing, not a decision by the Board to rely on this approach for protection of rare plants. Because NPPA Section 1913(c) may now be confusing, reference to this section will be removed via corrections in the Errata. CAL FIRE will continue to follow all relevant statutes and regulations, as well as recognize applicable case law.

Part VII.6.2.4, Specific Management Actions

Comment 29

Page VII.6.2-19: Special Concern Areas and Unique Habitats should address Bob Woods Meadow, and the two sensitive vegetation types; Sphagnum Bog (separate from wetlands) and Northern Bishop Pine Forest.

Response to Comment 29

Bob Woods Meadow - The special concern areas and unique habitats are based on those listed in the DFMP. On page 14 of the DFMP, and in Chapter 3 of the FMP) under Unique Habitat types, Bob Wood's Opening (aka Meadow) is listed. Although this type is unique on JDSF, the plant community is not rated as a rare community by CNDDB. On page 43 though 45 of the DFMP the levels of planning are discussed. Unique habitat is identified at the Watershed level of planning. Any specific projects would require site-specific analysis of unique habitats.

Sphagnum Bog -The special concern areas and unique habitats are based on those listed in the DFMP. On page 14 of the DFMP under Unique Habitat types, sphagnum bogs were listed as a sensitive community but not described in detail. The Sphagnum bogs occur within the Pygmy Forest at JDSF. **A section has been added to the proposed FMP to clarify that though the sphagnum bogs were not highlighted specifically for protection, both the Wetland and Pygmy Forest protection measures will apply.**

Northern Bishop Pine Forest – A vegetation type of this name was not specifically listed as a Unique Habitat type in the DFMP, nor were specific management requirements developed for it. Bishop Pine Forest at JDSF is a component of the vegetation types that lie between the Pygmy Forest and the Redwood Forest types. Much of this area has soil types that are not considered productive for commercial timber management. The DEIR recognized that "Stands dominated by pygmy cypress occurring on unproductive soils outside of true pygmy forests will not be harvested." The bulk of the cypress-Bishop Pine forests mapped at JDSF fall on low site soils (Class 8 or less) though a few are found in areas mapped as site class 4. The actual description of these stands listed Bishop pine as the dominant overstory tree with cypress present in a mid or understory layer. In general, the only reason for THP activities in Bishop pine forest would be for improving the transportation system or correcting an existing management problem. As described above for Bob Woods Meadow, site-specific analysis will be conducted before actions will take place in the Bishop Pine forest.

The 2002 DFMP (page 148) recognized and defined Cypress Groups as a Special Concern Area and provided direction. This vegetation type contains pygmy cypress but often has a majority of Bishop pine present.

The Department of Fish and Game, Biogeographic Data Branch-Vegetation Classification and Mapping Program, produced in September 2003 the "List of California Terrestrial Natural Communities Recognized by The California Natural Diversity Database." It listed Northern Bishop Pine Forest as a series or association considered rare and worthy of consideration by CNDDB.

"Pygmy Cypress Groups" and the "Northern Bishop Pine Forest" often refer to similar if not the same vegetation on the ground. The FMP Special Concern direction for the Pygmy Cypress Groups along with the necessity of project/site specific analysis would insure this vegetation receives appropriate consideration. **The Northern Bishop Pine Forest's status will be noted in the Final Management Plan by an addition to the discussion of Pygmy Cypress Groups. In addition, the discussion of "Cypress Groups" will note this vegetation may refer to "Northern Bishop Pine Forest".** The text is shown below in context

> *Cypress Groups*
>
> Cypress Groups, elements of bishop pine/pygmy cypress forest on unproductive soils (non-timberland), will not be subject to harvest. **Some of this vegetation may also be considered Northern Bishop Pine Forest, a series or association considered rare and worthy of consideration by California Natural Diversity Data Base (dated 9/2003).** Note that both **Bishop pine and pygmy cypress** can occur in redwood forest. In these areas (i.e., timberland) harvest may occur. As a special status plant species, effects to individual upland pygmy cypress will be evaluated on a project basis.

Comment 30

Page VII.6.2-19: Special Concern Areas and Unique Habitats, should include mature Douglas-fir/hardwood stands on gentle slopes with increase surface water retention and well developed duff layers (such as along ridgelines) that are rich in fungi and unique mycotrophic plants including sugar-stick *(Allotropa virgata*), gnome plant (*Hemitomes congesta*), pine sap (*Monotropa hypopithys*), and California pinefoot (*Pityopus calfornicus*). These species are non-photosynthetic plants that obtain fixed carbon from other plants via shared fungi that are mycorrhizal with tree roots (three-way relationship), and have a high level of specificity with a host fungus (Bidartondo and Bruns 2001). The California pinefoot is listed as uncommon. All species have known occurrences on the Forest, and are slow establishers dependent on mature forests and specific host trees (cut the tree, and fungi and plant die.)

Response to Comment 30

The Board notes that many of these plants have do not have a legal status as rare, threatened, or endangered. However, we recognize that projects can impact species without legal standing, potentially resulting in CEQA findings of significant effects.

Thus, the Board understands that locally unique, limited, or poorly understood species such as mycotrophic plants could be adversely impacted and lead to significant effects in the course of implementing the DFMP or the proposed FMP. The analysis below addresses this potential.

Although it is not explicit, the comments seem to include these assumptions: (1) Mature Douglas-fir/hardwood stands on gentle slopes will be limited or unique on JDSF, (2) Mycotrophic plants may be dependent on these specific locations, and (3) Timber harvest proposed by the FMP would threaten the fungi and mycotrophic plants. These issues are discussed below.

(1) Will mature Douglas-fir/hardwood forests on gentle slopes be limited or unique on JDSF as a result of the proposed alternatives? Under the FMP, rotation ages for even-aged management areas range from 60 to 150 years. Closed canopy “mature” stand conditions will continue to exist in even-aged management areas. Uneven-aged management areas will be characterized by more frequent entries and smaller scale canopy openings than the even-aged management areas. Individual trees will persist under the even-aged management areas and in the uneven-aged management areas. Mature Douglas-fir/hardwood on gentle slopes will continue to exist in substantial areas on JDSF under the FMP though distribution may be different than what is present now.

    Further, the proposed FMP will provide for substantial amount of older forest; through its late seral development areas and Older Forest Structure Zone. Forest wide, over one-third of the Forest is designated for the retention or development of older forest conditions with a range of topography including ridgelines with gentle slopes with Douglas-fir & hardwoods.

(2) Are mycotrophic plants dependent on or limited to mature Douglas-fir/hardwood stands on gentle slopes? At JDSF mycotrophic plants have been observed in 80 year old clear-cut stands. La Blanca (2004) found the rare *Monotropha uniflora* in stands as young as 40 years old in Humboldt County on industrial timber lands. These occurred on a range of aspects and topographic positions including slopes up to 60%. Floristic surveys for the proposed JDSF Northfork Spur THP by Schuler (2005) identified two locations with *Pityopus californicus* on 50 to 60% slope. This information suggests that the mycotrophic plants range extents beyond gentle slopes and may extend into younger closed-canopy stands than those traditionally identified as “mature”.

(3) Would disturbance occur in these areas that would threaten the fungi and the mycotrophic plants? For timber harvesting plans, surveys will be conducted and appropriate protection measures will be developed for the mycotrophic plants. For the management which causes the greatest change in forest conditions, even-age harvest, the FMP commits to retaining five to thirty trees per acre following harvests. This approach will provide for continued presence, though reduced area of mature trees and the associated ectomycorrhizal fungi and mycotrophic plants. Using

modeled CWHR Types for alternative C1, over the next 100 years the forest will retain stands with a minimum of CWHR 5D (Diameter > 24 inches, density >60% crown cover) for approximately 23% of JDSF. Note that the final plan will increase the amount are of Older Forest with a further increase in the portion of the forest with “mature” forest.

The three-way relationship between these organisms is complex and not well understood. Work in the Pacific Northwest has shown that fungi and possibly mycotrophic plants can persist in thinned stands (Bailey and Tappeiner in Muir et al. 2002, Pilz, Molina and Mayo 2006). Smith and others (2002) found that in Douglas-fir/Hemlock forests a similar number of ectomycorrhizal fungi species were found in three age classes and that between age classes there was a change in abundance of dominant species groups.

Given that mature Douglas-fir/hardwood stands on gentle slopes will continue to exist under the proposed FMP, that the distribution of mycotrophic plants plans does not appear to be limited to gentle slopes, that the mature Douglas-fir/hardwood stands will continue to exist in substantial portion of the forest, that habitat elements (trees) will be retained in harvested areas, and that the final plan includes substantial Older Forest areas, there is no basis for the creation of Special Concern Areas for Unique Habitats for mature Douglas-fir/hardwood stands on gentle slopes based on available knowledge at this time.

Comment 31

Page VII.6.2-20: Cypress Groups, it is unclear whether the sensitive pygmy cypress will be protected throughout its distribution on the Forest including single trees on productive soils.

Response to Comment 31

The Board recognizes that pygmy cypress (*Cupressus goveniana* ssp. *pigmaea*) is a CNP1B plant with a Global/State Ranking of G2T2/S2.2. It is also a component of a rare vegetation type, Pygmy Forest. Pygmy cypress can readily become established after disturbance, including timber harvest, well beyond the pygmy forest in upland redwood forest with productive soils. The DEIR, DFMP, and proposed FMP do not contain specific measures to protect individual pygmy cypress on productive soils throughout the forest. Protection measures will be evaluated on a site-specific basis when pygmy cypress occurs in upland North Coast conifer sites (i.e., productive soils). As an extreme example, protection of pygmy cypress seedlings growing on a landing might entail construction of a new landing and transportation system. The impacts of creating additional ground disturbance should be balanced against retaining an individual plant that became established as a result of earlier harvest. The Board anticipates that most pygmy cypress will be protected following site-specific analysis

when they occur on productive soils. There may be situations where protection of individuals on productive North Coast conifer soils may not be feasible.

Comment 32

Page VII.6.2-20: Pygmy Forest, limiting (vs. continuing) recreational activities may be appropriate for this rare and fragile vegetation type. The EIR should provide an in-depth impact assessment for all activities proposed in the pygmy forest. Potential beneficial management is burning, invasive weed control, and road abandonment.

Response to Comment 32

The Plan and EIR do not provide exhaustive discussion of the pygmy forest because such site-specific work is beyond the scope of the document. Programmatic level recreation, invasive weed control, and road management are addressed in the EIR. Specific projects such as burning will require site-specific analysis before they would be conducted in this rare vegetation type.

The FMP Goals contain several restoration objectives, including working with State Parks on landscape level restoration. This may provide an opportunity to approach the questions of recreation and invasive weed management in Pygmy Forest.

Comment 33

Pages VII.6.2-21 through 6.2-23: It is unclear if surveys will have a floristic element, which is a key component of the *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (California Department of Fish and Game 2000). Please note floristic surveys:

1. Generate a higher quality survey, noting all you see greatly improves the field review of the flora present in a project area. A predictive survey can miss taxa not predicted to occur and the surveyor will not be as observant with a narrowly focused survey (regardless of the skill).
2. Detect not only unexpected habitat associations of sensitive plants, but unpredictable micro-habitat occurrence within larger vegetation types, species range extensions, species occurrence within ecotones that may not have been predicted as potential habitat (a common occurrence).
3. Generate an overall species list that can be referenced, for example if the assessment has missed a sensitive species the omission can be addressed both from the reviewing point of view as well as the project proponent.

4. Provide a necessary component of a professional botanical survey for sensitive species and allow a determination of adequacy of the surveyor/survey, which is essential in determining whether sensitive species would be detected.
5. Lastly, floristic data (such as project generated) is crucial in developing knowledge of JDSF flora and sensitive botanical resources.

Response to Comment 33

For the FEIR and Final Plan the direction shall be "For timber harvesting plans and other large projects with the potential for negative effects on rare plants, JDSF shall follow the *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (California Department of Fish and Game 2000*). This will result in floristic surveys for the affected areas. On smaller scale projects, the survey effort will be appropriate for the level of CEQA analysis and the risk of impact to rare plants*." Guidelines for survey are not specific for the other alternatives; the same standards could well be applied.

Comment 34

Pages VII.6.2-22 and 6.2-24: The DEIR cites that sensitive plant knowledge will be enhanced in part on a project-by-project inventory basis, however without a floristic component to the survey methodology, there is unlikely to be an effective mechanism for collecting botanical data (such as new sensitive species or species composition and diversity). Also, development of appropriate management strategies will require a monitoring component. Monitoring is not discussed in the DEIR.

Response to Comment 34

The text of the DFMP and DEIR have been changed to clarify that the *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (California Department of Fish and Game 2000) will be followed for THPs and other large projects. Floristic surveys will result . Monitoring is discussed in the DEIR, DFMP, and proposed FMP. Monitoring rare plants for threats of invasive species is included as Supplemental Mitigation 1 in DEIR section 6.2.8 and carried forward to the FMP. The proposed FMP includes a Monitoring and Adaptive management section (Chapter 5). Plant resources are included. Additional monitoring can be developed for site-specific projects.

Comment 35

Page VII.6.2-23: As currently stated, survey design will be "*based on the concepts contained in the CDFG Guidelines*". This statement is unclear. Will surveys be conducted in a manner consistent with the CDFG Guidelines? The intent of CDFG Guidelines is to provide the factual and scientific information needed for determining the adequacy of the survey and surveyor, and to assess the significance of a project to impact sensitive plants pursuant to CEQA Section 15064. These guidelines apply generally to proposed projects under CEQA. In reviewing THPs, DFG relies on these guidelines as well as CEQA Sections 21000 of the Public Resources Code and Sections 15000 of the California Code of Regulations.

Response to Comment 35

We note that the CDFG guidelines do not represent regulation; they are intended to provide guidance for plant survey. **For Alternative C1 and C2 the wording regarding surveys will be clarified as follows: For timber harvesting plans and other large projects with the potential for negative effects on rare plants, JDSF shall follow the *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (California Department of Fish and Game 2000).** This will result in floristic surveys for the effected areas. This language is contained in **Chapter 3 of** the proposed **FMP.** On smaller scale projects, the survey effort will be appropriate for the level of CEQA analysis and the risk of impact to rare plants.

Comment 36

Page VII.6.2-23: Surveys and Mitigation Development should include provisions for DFG to review and comment on survey reports (often surveys are conducted after the THP review process), and consultation with DFG if an activity has the potential to impact a sensitive species. Consultation with DFG by the administrating agency is required for projects undertaken pursuant to a certified regulatory plan in lieu of the EIR process (CEQA Guidelines §§ 15250-15253).

Response to Comment 36

For timber harvesting projects, CAL FIRE intends to conduct surveys and include resulting reports and material during the THP preparation process so that they can be reviewed by DFG and other agencies. If for some reason surveys are delayed past the THP review period, CAL FIRE will provide the surveys to DFG for review and comment. For non-THP projects for which surveys are conducted, CAL FIRE will comply with the consultation requirements per CEQA. Where a higher level of review by or consultation with DFG seems appropriate for a given project, CAL FIRE will seek that higher level of contact with DFG.

Comment 37

Page VII.6.2-23: Sensitive plant documentation should include vouchering of populations (may include more than one occurrence) with a recognized herbarium such as the Jepson Herbarium at University of California at Berkeley or the College of the Redwoods Herbarium at the Fort Bragg Campus. Please note that a federal or state endangered, threatened, or rare listed or candidate species requires a permit to collect or take. For unlisted sensitive plants, collection should only be done if a given population is greater than 20 plants and include representation of the key features. All specimens should be pressed and put in between sheets of newspaper with a herbarium label made out of 100% rag paper (archival paper).

Response to Comment 37

CAL FIRE has provided non-listed specimens to College of the Redwoods voucher specimens where appropriate. Supporting improved knowledge of plants is consistent with JDSF's research and demonstration mission. The Board intends that CAL FIRE will work to continue and improve cooperation with botanical institutions.

Part VII.6.2.6, Impacts

Comment 38

Pages VII.6.2-26 through 6.2-29: Impact 3 and Impact 4, the current inventory data of the botanical resources on JDSF is not extensive, and proposed surveys do not appear or have a floristic component. How will new species, range extensions, or unpredicted species occurrence within new habitat or ecotones be detected? Last year, floristic surveys in the Garcia River drainage detected range extensions for two significant species; Santa Cruz clover (*Trifolium buckwestiorum*) was a county extension from the south, and marsh pea *(Lathyrus palustris*) was a county extension from the north.

Response to Comment 38

As noted in responses to Comments 33-35, above, CAL FIRE has committed to utilizing the *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (California Department of Fish and Game 2000) for timber harvesting plans and other large projects. This practice will result in floristic surveys for the affected areas. Floristic surveys have the potential to detect new species, range extensions, or unpredicted species occurrence within new habitat or ecotones.

Comment 39

Page VII.6.2-27, Par. 4: The DEIR implies that surveys will be conducted as necessary if "*potential to significantly impact a listed species*", and may differ for listed and non-listed sensitive species. It is not clear what is meant by this. It should be noted that surveys for listed and non-listed sensitive species should be conducted in habitat areas that will receive management impacts. Mitigation (vs. surveys) is based on significance of impacts. In a letter to Mr. Neil Fischer from Mr. William Snyder, dated July 19, 2001, he states "*Surveys are not a requirement; but unless the presence or absence is established, the available range of mitigations which would meet the requirements of 14 CCR 15370 would generally be limited to avoidance of suitable habitat.*"

Response to Comment 39

The Board agrees with Mr. Snyder that surveys would be needed to establish presence or absence of a listed species. Per Comments 33-35, above, CAL FIRE has committed to utilizing the *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (California Department of Fish and Game 2000) for timber harvesting plans and large projects. This approach will result in floristic surveys for the affected areas. JDSF will go beyond simply establishing presence or absence of listed or non-listed sensitive species.

Comment 40

Page VII.6.2-31: Table VII.6.2.3, robust monardella (*Monardella villosa* ssp. *globosa*) can be associated with upland forest openings and should be addressed as an upland forest associated species.

Response to Comment 40

Notes for Comments 40- 42: Table VII.6.2.3 is a hierarchical arrangement of Functional Groups. As stated in the DEIR at page VII.6.2-30, "Species that could fall within more than one group are included within the first appropriate group in the hierarchy. The first group in the sequence has a higher potential for negative effects from disturbances such as timber harvest." The DEIR acknowledges that species can fall within more than one functional group. Cumulative effect analysis focused on the long term changes in vegetation. This table's objective was to help place the rare plants in context of potential impacts of the changes. It was not indented as an information source for specific rare plant habitat preferences; DEIR Appendix 7B-2 contains this information. The table already covers two pages, adding plants in multiple functional groups would make the table larger without adding new information.

Because moving robust monardella (*Monardella villosa* ssp. *globosa*) from the Closed Cone Forest or Openings Group would list one more species in the Upland North Coast Conifer Group, this change will be reflected in the errata.

In Table VII.6.2.3, for the Upland North Coast Conifer Functional Group the legend includes “The plants included would be expected to found in upland actively managed potions of JDSF but may occur in other habitats as well.” The Board recognizes that this “worst case” arrangement may not list that the plants also are found in more protected habitat.

Comment 41

Page VII.6.2-32: Table VII.6.2.3, Pygmy Functional Group should include the sensitive pygmy cypress (*Cupressus goveniana* ssp. *pigmaea*), which is the primary defining species of the pygmy forest.

Response to Comment 41

The Board recognizes that pygmy cypress is a defining species of the pygmy forest. It also occurs beyond this community, at this point in time. Regarding Table VII.6.2.3, the DEIR states, “Species that could fall within more than one group are included within the first appropriate group in the hierarchy.” The first group in the sequence has a higher potential for negative effects from disturbances such as timber harvest. The Board recognizes that this “worst case” arrangement may result in a plant not being listed in the most well known fictional group, but the in the group where it would be more likely to be impacted. The Board will leave pygmy cypress in the current location to remain consistent with analysis methodology.

Comment 42

Page VII.6.2-32: Table VII.6.2.3, Wet Areas Functional Group should include marsh pea (*Lathyrus palustris*), coast lily (*Lilium maritimum*), North Coast semaphore grass (*Pleuropogon hooverianus*), and swamp harebell (*Campanula californica*). Although some of these wetland species (hydrophytes) are cited in the Upland North Coast Conifer Functional Group, they also occur in wetlands outside of this group.

Response to Comment 42

Regarding the addition of marsh pea (*Lathyrus palustris*) please see the response to Comment 24.

The Board recognizes that coast lily (*Lilium maritimum*), North Coast semaphore grass (*Pleuropogon hooverianus),* and swamp harebell (*Campanula californica*) can be considered wetland species. Regarding Table VII.6.2.3 the DEIR states, “Species that could fall within more than one group are included within the first appropriate group in the hierarchy. The first group in the sequence has a higher potential for negative effects from disturbances such as timber harvest.” Upland forest is more likely to be subject to negative effects than wet areas or wetlands protected by WLPZ. CAL FIRE will retain

coast lily (*Lilium maritimum*), North Coast semaphore grass (*Pleuropogon hooverianus*), and swamp harebell (*Campanula californica*) in the current location to remain consistent with analysis methodology.

Comment 43

Page VII.6.2-34: Forest understory species dependent on shade and moist forest microclimate are also sensitive to canopy removal.

Response to Comment 43

Although this was not listed by Sholars and Golec (draft 3-22-2004) as one of the three important ecological results, forest microclimate was listed among the secondary impacts. This information will be added to the FEIR via the errata.

Comment 44

Page VII.6.2-35: The Pygmy Forest and Closed Cone Forest/Openings Functional Groups, cites that no significant cumulative effects are expected to occur with management proposed and mitigation adopted. It should be noted that fire suppression is an important cumulative effect and it is not clear whether reintroduction of fire is proposed in these vegetation types.

Response to Comment 44

The comment does not make it clear whether the physical act of suppressing fire represents a potential cumulative effect, or whether the long-term absence of fire results in vegetative changes that DFG believes may represent a cumulative effect; however, we assume that the latter effect is DFG's concern here. We note that modification or analysis of CAL FIRE's fire control mission is not an objective of the DFMP, the proposed FMP, or DEIR. Further, fire suppression is a statutorily exempt activity under CEQA (PRC § 21080).

The DFMP, Alternative G, and proposed FMP provide no specific plans for reintroduction of fire in Pygmy Forest and Closed Cone Forest/Openings Functional Groups. JDSF recognizes that any management in the Pygmy forest must be carefully considered from many resources perspectives and include site-specific analysis. Fire is discussed as an ecological process on pages VII.6.2.40 and 41 of the DEIR. Fire protection and use of prescribed fire is discussed in section VII.8.1 of the DEIR. in the DFMP beginning on page 81, and in the proposed FMP in Chapter 3. At page 83, the DFMP recognizes that fire exclusion is not desirable in the long run and discusses the potential for conducting research on JDSF regarding the use of prescribed fire as a management tool.

In response to other concerns about use of fire in the pygmy forest the paragraph starting on page VII.6.2-21 is replaced by:

Habitat Management Practices: The concept of conducting control burns in the pygmy forest originated some years ago as an idea to benefit the Lotis blue butterfly and a host species coast hosackia (*Lotus formosissimus)*. Currently it is understood that other herbaceous members of the pea family may be hosts for the butterfly and that host plant habitat is not limited to pygmy forest. The concept of manipulating the rare pygmy forest for the possible benefit of the Lotis blue butterfly is not supported at this time. Local Botanists have supported the concept of carefully reintroducing fire into pygmy forest areas on JDSF. CAL FIRE recognizes that any proposal would be: research focused on improving understanding of the pygmy forest, limited in scope, based on sound ecological and botanical knowledge, supported by experts in the field, undergo appropriate CEQA analysis, and include appropriate survey, study, and monitoring.

Comment 45

Page VII.6.2-35: The Environmentally Sensitive Habitat Area (ESHA) designation for pygmy forest only applies to the Coastal Zone. A significant amount of pygmy forest acreage is outside the Coastal Zone and on private lands where future protection is not necessarily guaranteed.

Response to Comment 45

The DEIR will be modified to reflect that fact by including this information in the Errata.

Comment 46

Page VII.6.2-38: It is unlikely that the *Trillium ovatum* on JDSF differs significantly in habitat and life history requirements. The species occurrence in early seral or clear cut stands may be a factor of localized persistence rather then preference. Plant ecologists and botanists consider this species a mesic forest understory plant throughout its range. Many of the liliaceous forest herbs are slow establishers and are sensitive to timber harvest. Species such as *Clintonia uniflora*, *Smilacina racemosa*, *S. stellata*, and *Trillium ovatum* have declined over 40% more in harvest areas than in retained forest aggregates (Nelson and Halpern 2005).

Response to Comment 46

The Errata will include the information from Nelson and Halpern (2005) and the suggestion that upon review ,small sample size of old growth stands may have led to the classification of *Trillium ovatum* as a disturbance related species in the

study conducted at JDSF. The more temperate climate in the redwood forests in contrast to the white fir forests studied by Jules (1997) may play a role as well. Trillium was present in clear-cut stands studied on JDSF, but did not appear to occur consistently enough to be used in the vegetation classification system.

Comment 47

Page VII.6.2-38: The two studies suggesting that mid to late seral stands are not rich in forbs and grasses when compared to other seral stages on JDSF does not fully assess successional and species composition factors. Early seral stands will differ in species composition (shade intolerant and fast establishers) from mid to late seral stands (shade tolerant and slow establishers). Species diversity is high in early seral stands then it drops significantly in early to mid seral stands (such as in “dog-haired” stands). Forest understory species diversity increases with time and peaks in old growth stands (Halpern and Spies 1995). Early seral and late seral stands offer different types of plant diversity and both are important seral stages for plant diversity.

Response to Comment 47

The studies from JDSF were not included to dispute general ecological principles. They were included to incorporate local information that may be of value for more detailed understating of various principles. If indeed the approximately 100-year-old stands on JDSF are considered mature or mid seral, they have lower cover values for forbs than old growth stands. The low density of forbs in older stands with closed canopies is not unique to JDSF. Nelson and Halpern’s 2005 paper lists forbs in 80 to 140 year old stands. The highest mean percent cover for an individual species is at 5.6 % (*Xerophyllum tenax*). Many of the plants were frequently found with mean covers of 0.3% or less. The DEIR recognizes the importance of late seral, mid-seral, and early seral stands for different types of plant diversity.

Comment 48

Page VII.6.2-42: In addition to clean straw mulching, seeding with non-invasive species is another important measure for preventing the introduction of invasive weeds on roadbeds and other areas needing erosion control. Seeding species selection should utilize native (preferably) or non-native species not known to be persistent or invasive until native species reestablish. Commonly, annual (or “Italian”) ryegrass (*Lolium multiflorum*) has been utilized on forest lands. Ryegrass is a well recognized allelopathic, persistent and invasive non-native grass. DFG does not recommend the use of ryegrass on JDSF.

Response to Comment 48

The decision of mulching is not offered as a specific recommendation in this section on Multiple Effects. JDSF agrees that project-specific analysis also should consider seeding and that invasive or persistent species should be not be used. JDSF shares the concerns about *Lolium multiflorum.*

Part VII.6.2.7 Additional Management Measures and Monitoring

Comment 49

What management measure(s) will be used to assess potential direct and cumulative impacts to sensitive species from management activities? The DEIR does not appear to specifically address sensitive plant monitoring. Monitoring can be a powerful tool to determine trends over time and demonstrate whether management objectives for sensitive plants are effective. The DEIR should include a monitoring strategy for sensitive plants.

Response to Comment 49

Measures utilized to assess potential impacts to sensitive plant species will include scoping for potential habitats associated with project areas, survey for sensitive species (see earlier responses to comments regarding use of DFG survey protocols), review of existing literature regarding species habitat needs and relationships to potential effects, and an assessment of potential impacts associated with planned management activities. This assessment will include consideration of impacts associated with past activities in the area, as well as the potential for the project to interact with other past, present, or probable future projects to cumulatively impact sensitive plant species and occupied habitats.

The DFMP, Alternative G, and proposed FMP do include some direction regarding plant monitoring. Please see Chapter 5, Monitoring and Adaptive Management, in the DFMP or the proposed FMP.

In the DEIR section VII.6.2.7 Additional Management Measure 1 includes "... planning continued monitoring for rare plant occurrences in areas at risk for invasive plant infestations," (DEIR page VII.6.2-45).

Part VII.6.5. Wetlands

Part VII. 6.5.1, Regional and Project Setting

Comment 50

Page VII 6.5-1: Definition should also include that wetlands are transitional areas between terrestrial and aquatic systems.

Response to Comment 50

The Board recognizes that wetlands are related to both aquatic and terrestrial systems. The DEIR states, "Riparian lands include instream habitat and stream channels, adjacent floodplains, and wetlands. These lands are a critical link between stream channels and the hillslope process that deliver material to the channels (Megahan and Meehan 1991)," (DEIR Section VII.6.1-5).

Comment 51

Page VII 6.5-1: The quality and relative value of a wetland is also dependent upon its biological function as well as physical characteristics.

Response to Comment 51

The Board agrees with this comment.

Comment 52

Page VII 6.5-1: DEIR should provide a more comprehensive list of wetland vegetation types on JDSF such as freshwater marsh and swamp, and should also include the Forest's Lost Lake.

Response to Comment 52

A complete inventory of potential wetlands within JDSF has not been conducted. Wetlands may occur at the margins of streams, in the form of sphagnum bogs, in association with springs, seeps, and other wet areas. Various forms of wetland are recognized on page VII.6.2-2, and Lost Lake is listed there as a wetland within JDSF. Wetlands present on project areas will be identified during pre-project assessment work and will be provided with appropriate protection, per the DFMP, DEIR, proposed FMP, Forest Practice Rules, and other applicable authorities.

Comment 53

Pages VII 6.5-1 and 6.5-3: It is unclear what other types of management may be applied for wetland habitats that “maintains or restores productivity”, besides WLPZ protection measures.

Response to Comment 53

See response to Comment 4.

Part VII.6.5.2, Regulatory Framework for the Protection of Wetlands

Comment 54

Page VII 6.5-2: The DEIR should include a discussion on the Porter-Cologne Water Quality Control Act.

Response to Comment 54

The Board agrees that the Porter-Cologne Water Quality Act should be included here and a short discussion will be provided. The FIER will add the following amendment to the cited page:

> **Porter-Cologne Water Quality Act Water Code Section 13140-13147 states that “highest priority shall be given to improving or eliminating discharges that adversely affect any of the following: (1) Wetlands, estuaries, and other biologically sensitive sites.” Also, the Porter-Cologne Water Quality Act prohibits the nonpermitted filling of wetlands.**

Part VII.6.5.5, Impacts

Comment 55

Page VII 6.5-4: Management activities that are subject to the THP review process should also identify other potential wetlands such as marshes, swamps, bogs and fens, which are not necessarily associated with riparian habitats. In addition, the DEIR should discuss methods that will be utilized to identify and delineate wetlands in the field.

Response to Comment 55

The planning for THPs, or other projects, will include a field assessment of resources within the affected area. Wetlands, including those that are not associated with riparian habitats, will be identified through field reconnaissance and delineated on maps prepared for the project. The maps will be available for public and agency review. These are standard provisions of the THP process as specified in the Forest Practice Rules. Most of the features listed above by DFG are clearly within the realm of wet areas, springs, and watercourses, which are protected by the Rules, depending upon their value as habitat. Similarly to other resources, wetlands will be identified by the characteristics that they commonly exhibit, primarily including the presence of water and associated vegetation. Please refer also to DEIR Section VII.6.2 for further discussion of wetlands.

Comment 56

Page VII 6.5-4: Indirect impacts to wetlands may also result from changes in hydrology resulting from upslope harvesting (such as microclimate alteration) and road building/maintenance (such as drainage diversion or concentration), as well as changes in canopy cover and colonization of invasive non-native plants.

Response to Comment 56

The Board agrees with this statement. The planning for individual projects will include consideration of the potential for both direct and indirect impacts. As stated in the DFMP (page 61) and proposed FMP (Chapter 3), ecological function will be a prime consideration. The factors that may be considered include those associated with temperature and shading, site disturbance, sedimentation, compaction, and vegetation.

Part VII.6.6. Wildlife and Wildlife Habitat

Comment 57

To improve the clarity of many tables (e.g., VII.6.6.3), cells with no values should not be assigned a value of 0, but rather indicated by a dash (-). A value of 0 should only be used where the measurement was 0. “Other public” should be identified in the text. For comparisons of downed log characteristics, the data should also be expressed in units of volume as well as number.

Response to Comment 57

Tables VII 6.6.3 and 6.6.4 will be edited such that cells with a value of 0 will instead exhibit a dash (-). This change will be noted in the Errata section of the FEIR.

The requested data on downed log characteristics are not available.

Comment 58

Page VII 6.6-21: States that “Other unusual habitat types that also occur include northern coastal salt marsh, coastal brackish marsh, coastal and valley freshwater marsh, and grand fir forest.” Do all of these occur on JDSF?

Response to Comment 58

The referenced sentence is in a section describing regional conditions and is not intended to indicate that these habitat types are present on JDSF, as they are not specifically known to be found there. The “coastal and valley freshwater marsh” has not been mapped by CNDDB as occurring at JDSF but elements of this habitat type may exist along larger streams on the forest. If this habitat type is found during project-specific assessments, it will receive appropriate protections.

Comment 59

Page VII.6.6-30: In Table VII 6.6.5 why are there blank cells? For example, what canopy cover is necessary for conifer < 24 inches to be “Low to Moderate capability Habitat?”

Response to Comment 59

Blank cells should express a value of 10-100% for the corresponding tree size in the Table. **The Table will be edited such that 10-100% appears in the currently blank cells for the Low to Moderate Habitat Capability Habitat row.**

Comment 60

Page VII.6.6-33: Figure VII 6.6.8a does not seem to show what the related text implies. What are the data points on the graph?

Response to Comment 60

The Table illustrates the percentage of woodrat habitat (Y axis) relative to percentage of preferred owl habitat (X axis) for 40 owl sites (each site having a 0.5 mile radius) on lands classified as public reserved. The amount of preferred owl habitat within a 0.5 mile radius of each owl site was highest on public reserve lands. However, the scatterplot of the data in Figure VII 6.6.8a shows that the amount of preferred owl habitat varied greatly among owl site F and suggests a fairly broad range of habitat use.

Part VII.6.6, Marbled Murrelet

Comment 61

Page VII 6.6-53, Par.1: Please update using recent at-sea-survey data. Although there is a 300-mile gap in marbled murrelet distribution through marbled murrelet Recovery Zone 5, marbled murrelets continue to be detected in low numbers off the coast of Mendocino County.

Response to Comment 61

In the DEIR at page VII.6.6-53, paragraph 1, add the following at the end of the paragraph:

At sea surveys conducted off the Mendocino Coast in recovery Zone 5 noted approximately 290 murrelets in 2005 (J. Hunter USFWS pers. comm.. 3/29/06).

Comment 62

Page VII 6.6-53, Par.2: Note that the use of radar to detect marbled murrelets relies not only on the flight speed of the radar target, but also the target size, flight path, and observed flight time.

Response to Comment 62

In the DEIR at page VII.6.6-53, paragraph 2, add the following at end of the second sentence second paragraph:

The use of radar to detect Marbled Murrelets is dependent on several variables including flight speed of the radar target, target size, flight path, and observed flight time.

Comment 63

Page VII 6.6-53, Par.3: Include that marbled murrelets at inland detections have been documented using both radar and ground-based audio-visual surveys.

Response to Comment 63

In the DEIR at page VII.6.6-53, paragraph 2, add the following at end of sentence:

Marbled Murrelets at inland detections have been documented using both radar and ground-based audio-visual surveys.

Comment 64

Page VII 6.6-54, Par.1: The list of positive murrelet detection sites is confusing. The listed detection locations could be better organized by specifying whether murrelets were detected by radar or audio-visual survey methods. In addition, drainages should go from north to south (or vice-versa), and counties of the drainages should be specified. Correct Wheatfield Creek to Wheatfield Fork of the Gualala River (Sonoma County) and include the South Fork Eel murrelet detection (see CNDDB).

Response to Comment 64

In the DEIR, we correct "Wheatfield Creek" in paragraph 1, page VII.6.6-54 to "Wheatfield Fork of the Gualala River." Add at the end of this sentence "and South Fork Eel River (California Natural Diversity Data Base)."

The intent of the paragraph was to give an overview of the geographic range of positive murrelet detections in Recovery Zone 5 not to provide a complete list. Table VII.6.6.8 and table VII.6.6.9 provide the additional detail requested by the commenter including method of detection within a 10 mile radius of the JDSF assessment area organized by year of survey.

Comment 65

Page VII 6.6-55, Par.1: Specify that Horsetail Gulch <u>and</u> Gulch 16 (1.5 miles east of Horsetail Gulch) are two known occupied sites on Campbell Timberland Management lands in the Ten Mile drainage (Middle Fork) as identified using protocol audio-visual surveys.

Response to Comment 65

Add to the DEIR at page VII.6.6-55, paragraph 1 the following sentence: Horsetail Gulch and Gulch 16 (1.5 miles east of Horsetail Gulch) are two known occupied sites on Campbell Timberland Management lands in the Ten Mile drainage (Middle Fork) as identified using protocol audio-visual surveys.

Comment 66

Pages VII.6.6-56 and 57, Table VII 6.6.8: Consider re-organizing table by drainages from north to south within the 10-mile radius of JDSF rather than by date. Clarify whether breeding behavior is occupied behavior as indicated by sub-canopy flights, circling etc. (see Evans Mack et al. 2003). Note that Ralph et al. 1994 is outdated-protocol standards (footnote "a" on table). The protocol has been revised several times and the most current survey protocol is described in Evans Mack et al. 2003. Footnote

"b" - please confirm whether the USFWS ever had a murrelet survey protocol. Please correct the entry Noyo, the Worm 2- survey results by Mendocino Redwood Company which indicated that equivocal murrelet vocalizations were detected by the surveyor. In response, DFG asked for an additional year of survey where no murrelets were detected.

Response to Comment 66

Comment noted. Information on the character of breeding behavior as an indication of occupied behavior (sub-canopy flights, circling etc) is not consistently available across all reported survey results.

We make the following changes to the DEIR:

> **Under footnote "a" to Table VII.6.6.8 add the following text: This protocol has been revised several times and is currently reported in Evans and Mack (2003).**

Change the text of footnotes in Tables VII.6.6.8, 9 and 11:

> **Change "No USFWS protocol was available at this time" to "No recommended USFWS protocol was available at this time. Surveys may or may not have been done to the general protocol used at the time of survey and as indicated in the Table."**

Make Correction to Table VII.6.6.8 on page VII.6.6-57 under "Location" "Noyo, The Worm 2":

> **Under "Source" column change * text to: "Uncertain murrelet vocalizations were detected by surveyor. Additional year of follow-up survey resulted in no murrelet detections."**

Make same correction as above to the same entry in Table VII.6.6.9 on page VII.6.6-64.

Comment 67

Pages VII.6.6-56 and 57: Table VII 6.6.8 and Table VII 6.6.9 appear duplicative. Consider merging or having one table for radar detections and one table for ground-based audio surveys (protocol, non-protocol, or incidental). Currently, protocol for radar surveys has not been endorsed by the Marbled Murrelet Technical Committee.

Response to Comment 67

Comment noted. Table VII.6.6.8 and Table VII.6.6.9 are not duplicative. Table VII.6.6.9 indicates radar results and incidental observations, but the principle intent is to report area specific survey effort that resulted in no detections. Table 6.6.8 was intended to show only positive results. Table 6.6.9 shows the survey efforts including locations where no detections have occurred. The table was organized to combine years when possible to make it more compact.

Add footnote to Table VII.6.6.9 to indicate that "No protocol exists for radar surveys that is endorsed by the Marble Murrelet Technical Committee."

Comment 68

Page VII 6.6-72, Par.1: Evans Mack, et al. (2003) briefly describe the radar use for surveying marbled murrelets (as opposed to recommending it), but the protocol focuses on ground-based audio-visual survey methods. Consider the use of radar as a course filter to detect murrelet presence by drainage or watershed. Ground-based surveys should accompany radar surveys. As stated above, no radar protocol exists for surveying murrelets.

Response to Comment 68

The first sentence of the first paragraph will be edited to remove "recommends" and replaced with "describes". The sentence, "No radar protocol exists for surveying murrelets," will be added to the paragraph.

Comment 69

Page VII 6.6-72, Par. 4: See McShane, et al. (2004) for updated threat level from murrelet nest predators.

Response to Comment 69

Predation influences on Marbled Murrelet productivity are difficult to document. However, high levels of predation on adult murrelets by recovering populations of some raptor species in California may be problematic (McShane et al. 2004). Most active murrelet nests that have failed did so as a result of predation on adults, chick or egg by a variety of predators including small mammals, hawks and owls, and corvids (jays and crows). The level of forest fragmentation and extent of edge habitats (i.e., the variety and complexity of habitats) are likely important variables determining population density of potential nest predators, as is proximity to human activity and level of nest concealment. Determining the precise influence of a specific murrelet predator can be complex however. McShane et al. (2004) have noted that the Goshawk as an

opportunistic predator of birds and small mammals are also a potential predator of adult and young murrelets. It is unclear what the net impact of an increase in Goshawk presence would have on Marbled Murrelet nest success. Important prey items of the Goshawk like squirrels and corvids also are potential predators of murrelet egg or chick.

Comment 70

Page V11 6.6-75, Par.3: Please correct the diameter of nest branches in California as reported in Hamer and Nelson (1995) as ranging from 6 to 24 inches.

Response to Comment 70

The range of diameter of nest branches as measured at the tree trunk is correct as written. **Average diameter of nest branches as measured at the tree trunk is 13.8 inches, not 11 inches as reported in the DEIR. This edit will be made to the DEIR via the Errata section of the FEIR.**

Comment 71

Page VII.6.6-80: Figure VII.6.6.8b is difficult to read and interpret. Consider using color and well-defined polygons to delineate acreages of potential marbled murrelet habitat.

Response to Comment 71

Comment noted. The electronic version of this graphic available in the on-line version of the DEIR at http://www.fire.ca.gov/php/rsrc-mgt_content/downloads/jdsf_deir_05/DEIR_Part_07_VII.06.6_V1B_Wildlife_12.05.pdf provides a clearer image of this figure.

Comment 72

Page VII 6.6-83: Regarding the restoration of marbled murrelet habitat, the application of the Carey et al (2002) guidance should be debated based on site-specific values to murrelets and other forest management goals. DFG looks forward to participating in creating timber management schemes intended to promote marbled murrelet and/or late seral habitat conditions.

Response to Comment 72

The Board believes that CAL FIRE will welcome DFG's participation in the Marbled Murrelet habitat planning that will be conducted under the Additional Management Measure for Contribution to Recovery of Marbled Murrelet. Discussion of the Carey et al. guidance will be very appropriate in this setting.

Part VII.6.6.3, Project Measures for Protection of Resources

Comment 73

Page VII.6.6-113: Regarding hardwood standards, what are the scientific and biological bases for the 10% and 15% of the basal area goals? Are these percentages of the pre-harvest or post-harvest stands? How will hardwoods be retained as ecologically important components of stands, especially in stands where they are reduced and subjected to competitive conditions in the resultant conifer stands? Similar to the deadwood management plan outlined above, there should be a hardwood management plan that also includes monitoring with feedback to specific management actions if the goals are not being met. The plan needs to recognize that hardwood-dominated timber sites are a natural, albeit long-lasting early seral stage. As such, conversion of all such stands to maximum timber production is unwise. We recommend that JDSF maintain some representative hardwood dominated stands in each planning watershed where they are present.

Response to Comment 73

The biological basis for hardwood basal area goals are summarized in the Committee report: Hardwood Retention for North Coast California Timberlands Northern Sonora, Mendocino, Southwest Trinity, and Southern Humboldt Counties. Contribution made by the Regional Committee on Hardwood Retention, North Coast 1996. Available via the Integrated Hardwood Range Management Program at UC Berkeley and on the Internet at http://danr.ucop.edu/ihrmp/hw%20reten%20final.pdf. Post-project upland basal area retention goals of 10% and 15% in addition to retention of large size class hardwood (>36 inches DBH) wherever they occur on the forest were analyzed in the DEIR and determined to not have a significant effect on hardwood and associated wildlife species over the term of the project. Retention that emphasizes hardwood trees of a size that maximizes mast production at the project level in upland areas, and current hardwood distribution and representation on the forest, are expected to maintain hardwoods as a functional ecological component of forested stands.

Comment 74

Page VII.6.6-113: Regarding the snags standards, where are the “wildlife special concern areas” described, and what acreage do they cover? What are the “select areas” in which JDSF “will recruit snags through indirect measures, such as retention of larger conifers (at least 30 inches DBH)?” As suggested above, recruitment should be assured in all timber harvest units, regardless of silviculture.

Response to Comment 74

Not all acrages can be meaningful specified because of their variability over time. Wildlife special concern areas include Northern Spotted Owl nest areas, Osprey nest areas, Watercourse and Lake Protection Zones (7,440 acres), Woodlands special treatment area (2,511 acres), State Park special treatment areas (267 acres), reserved old growth groves (459 acres), and late seral development areas (including Class I and III WLPZs, 10,000 acres). Over one-third of the JDSF forest land base is designated to maintain or achieve late seral development characteristics over time.

“Select areas” refers to the 160-acre subwatersheds where snag densities and recruitment are not at desired levels. Snag retention and maintenance/recruitment objectives apply throughout JDSF, regardless of the silvicultural system being applied.

Comment 75

Page VII.6.6-113: Regarding the LWD standards, to assure that the demise of one tree does not dominate the standard (and thus overly-localize the value), the standards should specify that the counts should be limited to pieces derived from separate trees, where possible. As for other habitat components, monitoring for LWD should be described and a feedback loop should be included for purposes of adjusting the strategies if warranted.

Response to Comment 75

There is no known biological basis to support the concept that LWD pieces, if meeting desired size and density standards as measured over a 160-acre subwatershed, area should come from separate trees. Establishing the standard as an average over a 160-acre area allows for acre-to-acre variability in the densities of large woody debris. This standard will result in higher-than-average densities of down logs in certain areas and lower densities in other areas. This variability is considered desirable in meeting the cover and feeding needs of a variety of species.

The DEIR (page VII.6.6-114) will be corrected in the FEIR Errata to clarify monitoring needs regarding LWD: “Periodic sampling will be utilized to monitor LWD density and composition as part of the CFI Inventory System.”

Comment 76

Page VII 6.6-114: Regarding the “Species of Special concern” bullet, it should be clear that the primary mitigation for listed species is avoidance. For listed species, determining significant effects should not be diminished by rationalizing perceived minor effects or the presence of off-site habitat or individual occurrences. These factors may be brought into DFG’s decision process where take cannot be avoided. For each

species of special concern (listed or otherwise) where a project areas has habitat or species presence, the impact assessment should include nearby areas where impacts may also occur. A cumulative impacts assessment area shall, by default, extend "beyond the boundaries" of the assessment area.

Response to Comment 76

The reference to "protection measures" for listed and riparian species conveys an intention to avoid impacts. Protection measures provided for species of concern in the DMFP (see pages 62- 69) generally call for maintaining or increasing populations and habitat.

The language in the cited paragraph already provides that "An assessment area that extends beyond the boundaries of the planned activity also may be required for some species." This language addresses the need to extend "beyond the boundaries" of the assessment area as needed to address cumulative effects for some species.

Comment 77

Page VII.6.6.115: The paragraph prior to "training" is unclear. Is "project" as used in this paragraph equivalent to "project" as defined under CEQA, or more loosely as any activity that JDSF undertakes? Does this paragraph mean that the rigor and focus of scoping (and subsequent surveys and/or development of mitigation measures) will differ between projects based on the premises of perceived habitat impact? The paragraph in the project examples is unclear. Does it mean that activities leading to repeated, periodic disturbances will have a different scoping/mitigation process than those for pre-commercial thins, etc.?

Response to Comment 77

The following sentence will be added: "'Project' in this context is loosely defined as any activity that JDSF undertakes. Scoping focus is project-specific and driven by potential habitat impact expected from the activity either individually or cumulatively."

Comment 78

Page VII.6.6.116: Regarding survey protocols, it should be noted that some species may not have "established protocols," and JDSF may want to deviate from established protocols for site-specific reasons. This paragraph should simply state that the protocols will be those provided or endorsed by DFG (and USFWS, as appropriate).

Response to Comment 78

The suggested edit will be implemented via the FEIR Errata section.

Part VII.6.6.4, Additional Management Measures

Comment 79

Pages VII.6.6-118 and 119: The acreage figures provided for "contribution to marbled murrelet habitat" are confusing, and could be easily cleared up if presented in tabular format. Is the 20% inclusive of the old-growth stands? Where are the non-stream corridor late-seral development stands? Do these figures take into account any of the possible key areas for murrelet habitat suitability assessment? What amount of the "key areas" is CDF committing to provide?

Response to Comment 79

Areas of JDSF that have potential to develop into habitat suitable for the marbled murrelet, due to an intention to manage these areas to retain or recruit late-seral habitat conditions, include the following (see FMP Map Figure 5):

- Old-growth groves and adjacent augmentation areas,
- Watercourse and Lake Protection Zones for Class I and II watercourses,
- Late-seral development areas, which includes the Class I and II WLPZs, most of the Woodlands STA, upper Russian Gulch and lower Big River, and
- Possible future murrelet habitat designation as part of the Marbled Murrelet Management Measure

Many of these areas overlap, but taken in total account for approximately 22 percent of JDSF (approximately 10,500 acres) without including potential additional acreage associated with the Marbled Murrelet Additional Management Measure. Additionally, parts of the Older Forest Structure Zone (see FMP Map Figure 5) may eventually develop into habitat suitable for the species.

FMP Map Figure 5 depicts the forest areas dedicated to future habitat development, including late-seral forest. At this point, prior to implementation of the Marbled Murrelet Management Measure (FMP, Appendix IX), it is speculative to estimate the total amount of forest area that the Measure may eventually involve. Coincidentally, the USFWS is currently in the process of designating critical habitat for the species, which will include portions of JDSF.

Comment 80

Comment 80a

Pages VII 6.6-118 and 119: Alternatives C1, C2 and E propose as mitigation the implementation of Contribution to Recovery of Marbled Murrelets. DFG finds that the proposed Contribution to Recovery of Marbled Murrelets is ill-defined, unclear and will unlikely be effective in contributing towards the continued existence and improvement of marbled murrelet populations in the area. We offer the following reasons:

Response to Comment 80a

It is important to clarify that the Additional Management Measure for Contribution to Recovery of Marbled Murrelet is not a mitigation, since it was not determined to be necessary in order to prevent a significant adverse impact on this listed species. Rather, it was developed to contribute toward recovery of the species.

As background, CAL FIRE directly sought and received through public comment, guidance from a variety of sources of Marbled Murrelet expertise including the Department of Fish and Game, US Fish and Wildlife Service, and Oregon Cooperative Wildlife Research Unit. CDFG in their July 11, 2002 DEIR comment offered no substantive recommendations on the proposed and less extensive Marbled Murrelet conservation strategy of that DEIR iteration beyond the buffering of existing old-growth groves and recruitment of old-growth at some unspecified time and location in the future.

CAL FIRE consulted with CDFG representative (S. Martinelli) on July 6, 2004. At that meeting CDFG described current survey protocols, the need for project level surveys and current seasonal closures and disturbance buffers to prevent disturbance of occupied sites. More relevant to the Management Measure proposed in the DEIR, however, were CDFG recommendations concerning the spatial distribution of currently unoccupied habitats that would be recruited as future Marbled Murrelet habitat. CDFG recommended that habitat areas be “closer to the coast” to take advantage of cooler and more moist climate conditions that would be conducive to epiphyte development and appropriate limb structure for murrelet nesting opportunity. Current levels of recreational use should not discount areas for future murrelet habitat management efforts. In addition, other land ownerships such as State Park lands and late seral old-growth conditions found there should be, in essence, enlarged with the addition of adjacent lands for Marbled Murrelet habitat recruitment on JDSF.

Similar guidance was provided by the US Fish and Wildlife Service to CAL FIRE in their comment letter of June 24, 2002 and which was subsequently provided to CDFG at their request on or about July 7, 2004. US Fish and Wildlife Service input to CAL FIRE Marbled Murrelet management direction noted that: 1) Russian Gulch State Park and nearby areas are “exceedingly important to MAMU survival and recovery” and 2) “Considering the importance and proximity of Russian Gulch to JDSF, the Service

requests that consideration be given to measures that could be highly beneficial to MAMU. Specifically, the Service recommends that areas on JDSF adjacent to Russian Gulch be included as a research area for the purpose of developing silvicultural prescriptions intended to improve or develop suitable MAMU nesting habitat."

Marbled Murrelet management guidance was also received as public comment on 15 July 2002 from the Oregon Cooperative Wildlife Research Unit (K. Nelson). Her comment letter summarized recent research on marbled murrelet habitat associations at the landscape scale pertinent to the DEIR's proposed Additional Management Measure that suggests that " 1) murrelet nests are less successful in areas close to human habitation or human use 2) management efforts should focus on protecting or creating large, contiguous blocks of habitat, especially near the coast; and 3) murrelets nest in low densities therefore large forested reserves are needed to maintain and improve murrelet populations." Similarly, "The location and size of the JDSF is perfect for contributing to the survival and recovery of this state and federally listed species, which is why it was designated as critical habitat. Such an important role for the JDSF highlights the need to: 1) save existing older-aged forest stands; and 2) identify and create additional areas of suitable habitat for murrelets, beyond the preservation of the existing old-growth groves and proposed buffers. This should take place primarily on the west side of the forest, near to the Murrelet's foraging habitat. The environmental gradient from wet on the west side to dry on the east side of the JDSF makes the east side less favorable for murrelet nesting (hotter microclimate and fewer nesting opportunities (less substrate for nests))." Finally, "Studies need to be initiated to address the best and quickest means of creating murrelet habitat."

See also the response to Comment 2, above, where the recent U.S. Fish and Wildlife Service process for a new designation of Marbled Murrelet critical habitat is discussed and the additional Marbled Murrelet protection mechanisms contained in the proposed FMP are identified.

Comment 80b

1. Only the *identification* of key areas for *assessment* of marbled murrelet habitat is proposed. In other words, the Russian Gulch, lower Big River, Mitchell/Jughandle Creek, and lower Hare Creek areas have not been selected as areas for murrelet habitat protection and recruitment. Rather, the areas have only been identified as places to examine in the future (i.e., 18-24 months following DFMP implementation) for murrelet habitat retention and recruitment. The DEIR fails to disclose the criteria and justification used to identify areas for assessment, and does not detail how areas will be assessed and then chosen for murrelet habitat retention and recruitment. For example, why are the Caspar, upper Hare, and Upper Parlin Creek watersheds not identified as key areas for assessment for marbled murrelet habitat recruitment even though, according to Map Figure R, these areas are fully suitable for marbled murrelets? All identification, assessment and selection criteria of marbled murrelet habitat areas should be fully described and available in the environmental document for public and agency review. CDF should seek input from

DFG and FWS prior to the selection of marbled murrelet retention and recruitment areas.

Response to Comment 80b

While the Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat specifically identifies a number of areas for assessment of their potential for current and future habitat, the intent is not to limit the assessment to only these areas. As noted, by DFG, Map Figure R indicates other areas with potential high habitat suitability.

Specific elements of the proposed management measure and criteria developed for habitat selection were developed based on the input received from CDFG, USFWS and others and an extensive review of current Marbled Murrelet scientific literature. Pages VII.6.6-52 through VII.6.6-90 of the DEIR summarize the habitat relationships, threats and current population status, and other aspects of the species biology and natural history that were used in identification of areas for habitat recruitment and assessment. The areas identified for evaluation are considered the best opportunities for recruitment of MAMU habitat available on JDSF while also considering other habitat requirements of the species. However, as noted above, the assessment will not be restricted to these areas alone. The collaborative process to implement the Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat will include the development of the “identification, assessment and selection criteria” for Murrelet habitat. Input from DFG and FWS will be sought before selection of the Murrelet retention and recruitment areas.

A key element of the proposed Additional Management Measure is site-specific assessment of the habitat areas identified to evaluate necessary management measures (if any) to be applied and to assess potential for recruitment. This evaluation would be completed within the first 18-24 months of DFMP implementation in collaboration with CDFG, USFWS, State Parks and others and is described on Page VII.6.6-119 of the DEIR.

The proposed FMP, as compared to Alternative C1, designates an additional 1,549 acres for development of late seral habitat for Marbled Murrelet. The area so designated is in the Russian Gulch and Lower Big River area of JDSF.

Comment 80c

2. The procedure for protecting remaining old-growth trees and stands is unclear. For example, does the protection of old-growth trees also include the retention of neighboring trees to minimize windthrow and microclimate fluctuation? Also, it is uncertain from information provided whether old-growth trees include all trees with potential marbled murrelet nest platforms.

Response to Comment 80c

JDSF seeks to prevent the loss of any future Marbled Murrelet habitat management options that may occur as a result of forest management activities. To that end, the DEIR describes an old-growth tree retention policy. Individual old-growth trees with platforms greater than 8 inches are retained as described on DEIR page VII.6.3-25. Existing old-growth groves are protected from windthrow, with many groves augmented with additional acreage to be managed toward late-seral forest or older forest conditions. Site-specific individual tree windthrow and other protections needed to achieve the old-growth tree retention objective are determined at the level of the individual project as guided by the old-growth tree retention policy. In addition, the regulatory framework (DEIR pages VII6.6-110 to VII.6.6-113) under which forest management activities are planned and implemented prevent the “take” of marbled murrelets and provide additional habitat protections. Local field evidence does not suggest that individual old-growth trees are prone to windthrow. Most of these trees are remnants from prior clearcutting efforts, and have adapted to open conditions. Most of these trees will be retained within partial harvest areas, where a substantial level of wind protection will occur.

Comment 80d

3. The identification of marbled murrelet areas for assessment is not based, at least in part, on current, relevant marbled murrelet surveys performed in JDSF or potential murrelet nest tree abundance and availability.

Response to Comment 80d

This statement is incorrect. Relevant Marbled Murrelet surveys are summarized on DEIR pages VII.6.6-53 through -72. “Potential murrelet nest tree abundance and availability” were considered in the selection of key areas for further wildlife agency collaboration and site specific evaluation as detailed in the DEIR pages VII.6.6 78-82. Contrary to comment, the identification of candidate murrelet habitat areas was principally guided by marbled murrelet sighting and current activity (Russian Gulch) and likelihood of recruitment of suitable nesting habitat. Collaborative site-specific analysis and evaluation as described in the Management Measure are expected to maximize Marbled Murrelet habitat recruitment success.

Comment 80e

4. The protection of riparian old-growth stands may not contribute significantly to murrelet habitat recovery unless they connect to larger blocks of late successional forest habitat. Thin, linear patches of habitat will unlikely be large enough to provide adequate nesting habitat for murrelets. Also, large perimeters of edge between late and early successional forest habitats may reduce nearby marbled murrelet nest

success by attracting and facilitating murrelet nest predators such as Steller's jays and ravens.

Response to Comment 80e

As designated in the proposed FMP, larger blocks of potential Murrelet habitat will be provided through the designation of 3,700 acres of late seral development areas in the southwestern portion of JDSF (see Map Figure 5 in the proposed Administrative Draft Final Forest Management Plan) and the designation of a 6, 803-acre Older Forest Structure Zone.

Riparian zones are not proposed as candidate murrelet breeding habitat. The discounted nesting habitat value of late successional forest conditions associated with stream course riparian zones for murrelets and the influence of edge on potential nest predators is clearly described in DEIR pages VII 6.6-77 to -78 and VII.6.6-127. It is expected however that over time these areas will provide enhanced habitat for murrelet movement across the landscape to suitable nesting sites within larger blocks of late successional habitat.

Comment 80f

5. The proposed Contribution to Recovery of Marbled Murrelet Habitat plan is not a clear and specific plan to improve nesting conditions for murrelets on JDSF. A more effective contribution towards the recovery of marbled murrelets in the area would be through the implementation of a marbled murrelet management plan. This would entail the preservation and recruitment of large blocks of late successional habitat that lie immediately adjacent to, are contiguous with and are in the vicinity of, existing known occupied marbled murrelet habitat such as the Russian Gulch State Park. Any removal of trees within these blocks would only be done to enhance marbled murrelet nesting habitat and would be conducted only with state and federal agency, university, and marbled murrelet technical committee input and oversight. Humans and human garbage and food sources should be strictly controlled and/or removed in habitat retention and recruitment areas. A marbled murrelet monitoring program should be included as part of the management plan. To date, it appears that the presence of marbled murrelets on JDSF has only been cursorily investigated through THP-driven murrelet surveys. Thus, survey information is absent over large portions of JDSF. Under a more comprehensive strategy to recover marbled murrelets and their habitat on JDSF as part of the DFMP, landscape-level surveys using radar should be conducted in key drainages. In conjunction with radar surveys, rigorous ground-based murrelet surveys (i.e., increased survey effort above current protocol level) should be conducted. If marbled murrelets are detected outside of above-mentioned late successional forest blocks, then appropriate measures to protect, buffer and expand murrelet occupied areas should be applied. Survey information would also be used to implement a murrelet predator management plan if warranted, and direct murrelet habitat management research.

Response to comment 80f

The Additional Management Measure for the Contribution to Recovery of Marbled Murrelet Habitat was not developed to function as a specific plan to improve and recruit nesting conditions as suggested by the comment; rather, it provides a process for developing such a plan. The management measure identifies an initial list of habitat areas for further evaluation with collaborating wildlife agencies and others. The management measure would provide the basis of the plan suggested by DFG, including the elements described in the comment, and also identify any necessary habitat management measures to speed habitat recruitment.

A detailed management plan that includes site specific habitat delineation and development of any necessary silvicultural prescriptions as well as opportunities for control of predators and human induced disturbance is well beyond the programmatic nature of the DEIR itself. Full implementation of the proposed additional management measure including collaboration with other interests is expected to achieve that planning need within the first 18-24 months of Forest Management Plan implementation.

In the context of the programmatic DEIR the additional management measure also functioned as a means to further compare and contrast alternatives proposed and make an assessment of impact to the sustainability and recovery of Marbled Murrelets. This assessment was based on the best available information regarding Marbled Murrelet habitat requirements and the potential of JDSF to provide that habitat.

Comment 81

As proposed, it is doubtful that the DFMP's Contribution to Recovery Marbled Murrelet Recovery described in the DEIR as an additional mitigation measure will help improve habitat conditions for marbled murrelets adjacent to and within JDSF, and in Conservation Zone 5 in general. The DFMP should include a clear and concise marbled murrelet management plan as explained above, that fully justifies and accurately identifies; a) specific areas for suitable and near-suitable habitat retention (e.g., adjacent to Russian Gulch State Park), b) short and long-term murrelet habitat recruitment, and c) all current and future timber harvesting, habitat management, research and human uses in the recruitment areas. The DEIR should be revised to include such a marbled murrelet management plan.

Response to Comment 81

Comment noted and addressed above under Comment 80. To reiterate, in summary, the DEIR's Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat provides the process for creating exactly the kind of Marbled Murrelet management plan that DFG is requesting. The proposed FMP designates the Russian

Gulch and Lower Big River areas (1,549 acres) for the development of late seral habitat for Marbled Murrelets.

Part VII.6.6.6, Project Impacts

Comment 82

Page VII.6.6-122, Other Unique and Special Habitat Features: There is little mention of wildlife trees or the importance of wildlife tree habitats such as basal hollows. However, the DEIR discloses at least 14 sensitive wildlife species that depend on large tree structures. In addition to developing late seral stands in riparian zones and around existing old-growth stands, the DEIR should address individual trees with special wildlife elements. Large, decadent, predominant trees that were once abundant prior to the extirpation of late seral forests are currently rare and scattered on commercial timberland, where past timber harvests removed most of the old-growth/wildlife tree habitat including isolated decadent, predominant trees exhibiting either (singularly or in combination) basal hollows, small cavities, internal rot or mistletoe broom, crevice cover (loose or deeply furrowed bark), complex crowns, and lateral large limbs or epicormic branching (new growth such as shoots or limbs borne on old wood of trees). For trees with fire-derived basal hollows, complex or broken crowns and other cover types, their vertebrate wildlife value for species such as Vaux's Swift and Purple Martin (in reference to page VII.6.6-128) and is also extensively documented (Gellman and Zielinski, 1996; Franklin, et al., 2000; Hunter and Mazurek, 2003; Mazurek and Zielinski, 2004). There was very little discussion in the DEIR about the importance and essentially irreplaceable nature of basal hollows for wildlife. These forest elements are considered irreplaceable features for wildlife habitat and in some cases they are not obvious old growth, but instead, damaged (e.g., by fires of wind or both) second growth that have developed wildlife habitats. How will trees that exhibit the aforementioned wildlife habitat characteristics be evaluated and protected when they are not obvious old-growth trees? The DEIR should disclose what characteristics will be used to identify special wildlife elements and that they will be given special consideration in the management plan. Consider adding additional retention criteria (similar to the aforementioned characteristics above) to Mitigation 1 on page VII.6.6-131 (Mitigation and Monitoring) that captures these types of wildlife trees.

Response to Comment 82

The importance of "wildlife tree" habitats such as basal hollows (goose pens) and other trees with desirable structural attributes providing wildlife habitat and protections provided are described on page VII.6.6-122, page VII.6.6-14 to 19, page VII.6.6-101 re Vaux's Swift, page VII.6.6-102 re Purple Martin, page VII.6.6-128 re Vaux's Swift and Purple Martin, and pages VII.6.6-105 to -108 re Pacific Fisher.

The DEIR (Page VII.6.3-25) describes the structural attributes of individual old-growth trees. The DFMP provides for retention of old-growth groves and individual old-growth trees throughout the forest with identified structural characteristics of value to wildlife. In addition, the proposed FMP dedicates over 16,000 acres (36 percent) of JDSF to the development of late seral and older forest conditions. Other trees will be retained for purposes of snag and down log recruitment, and some trees with structural characteristics of value to wildlife may be retained in project areas following an assessment of structure need, and in consideration of recommendations made by the Department of Fish and Game during project review. The distribution and quality of trees with wildlife structure or potential structure varies across the forest, requiring site and project specific analysis for identification. The Board believes that CAL FIRE would welcome participation in research to better understand the role of structure provided by young trees. Some of the research by Mazurek cited in the comment was conducted on JDSF and DFG staff trained JDSF staff on the subject.

Comment 83

Page VII.6.6-123: Regarding the lotis blue butterfly, coast hosackia might be the species host plant, but other herbaceous species of the pea family are thought to be potential host/food plants. Also coast hosackia is not considered an early successional species, and its habitat is better described as open wetland habitats rather then disturbed wetland habitats.

Response to Comment 83

The Lotis Blue Butterfly account will be edited based on CDFG comment as follows: Lotis blue butterflies have a close association with coast hosackia (*Lotus formosissimus*) and potentially other members of the pea family. "Disturbed early successional wetland habitats" is omitted and replaced with "open wetland habitats." This change will be reflected in the FEIR Errata section.

Comment 84

Page VII.6.6-124: The contention that WLPZ protection measures will improve habitat of yellow-legged frogs is not fully supported by the literature. The DEIR is proposing to manage stream side areas for high canopy cover and cool water for several other species. However, yellow-legged frogs are generally more abundant in watercourses with little canopy and warm water. Thus, WLPZ management goals could well reduce habitat quality for this species. It is not surprising to find that a specific suite of management actions might enhance habitat for some species and diminish it for others.

Response to comment 84

We agree with DFG's description of the habitat relationships of the foothill yellow-legged frog. Prior to initial timber harvest, the yellow-legged frog was probably a somewhat marginal species at JDSF that probably benefited from opening up streams to solar radiation. As such, the proposed FMP's riparian protection measures may reduce habitat suitability for the species. Given the generally marginal nature of coastal redwood forest for this species, and incompatibility of its requirements with those of other fish and wildlife species (including listed salmonids, murrelet, and spotted owl) that the Board concurs prefer denser forest, this reduction in habitat for the yellow-legged frog is a reasonable trade-off of wildlife values. The yellow-legged frog is expected to endure at a smaller population level with the JDSF.

Comment 85

Page VII.6.6-124: General comment about the use of CWHR in the analyses presented. The DEIR identifies the version and the habitat capability calculation method. However, it does not note what components were included or excluded from the analyses. A suggestion is to introduce the CWHR model before its application is reported in the document. A table that identifies habitat types and describes the stages used in the subsequent tables should be provided. At the same time, the document should describe the growth models used to grow the CWHR stands over time.

Response to Comment 85

We take the term "components" to mean special habitat elements (i.e., habitat features) listed in the CWHR. The inclusion or exclusion of certain special habitat elements in the CWHR query design influences the list of species expected to occur in the assessment area. Special habitat elements that were unlikely or known not to occur in the assessment area (tidepools, kelp, salt ponds, etc.) were omitted from the CWHR query. The resulting species list provided a starting point for further refinement using species distribution maps and wildlife survey data specific to the assessment area.

CWHR model application to the wildlife analysis is described in detail on Pages VII.6.6-131 to -141. Growth models used to grow CWHR stands over time are described in Appendix 7A. A table as well as a figure that describes habitat types, stages, and acreage used in all wildlife analyses performed is already included for each alternative.

Comment 86

Page VII.6.6-125: What is meant by "protecting" nest sites and post-fledgling areas of 100 acre and 300 acre, respectively? Does this pertain to goshawk nests?

Response to Comment 86

"Protecting" means retaining or improving functional characteristics through avoidance or appropriate management. The section is found in a paragraph with a "Northern Goshawk" subtitle.

Comment 87

Page VII.6.6-126: Regarding osprey, note that the USFWS does not exert specific jurisdiction of this species relative to the FPRs.

Response to Comment 87

The sentence will be edited to remove the reference to USFWS.

Comment 88

Page VII.6.6-127: Regarding murrelets, the text should be specific in stating that mitigation measures are avoidance measures.

Response to Comment 88

The sentence: "Potential mitigation measures for occupied murrelet habitat include avoidance of disturbance or habitat alteration" will be added to the second paragraph. This change will be noted in the Errata section of the FEIR.

Comment 89

Page VII 6.6-127, Par.3: The DEIR states that the DFMP defines marbled murrelet habitat as any intact remnant stand of old-growth forest at least two acres in size and 200 feet across. Marbled murrelets have been documented nesting in second-growth forest with single residual conifers with suitable nest platforms or in mature forest stands with scattered residuals with platforms (DFG files). This definition should be revised to reflect recent murrelet habitat nest stand and nest tree characteristics described in McShane et al. (2004) and Evans Mack et al. (2003).

Response to Comment 89

The sentence, "Marbled Murrelets have also been infrequently documented nesting in second-growth forest with single residual conifers with suitable nest platforms or in mature forest stands with scattered residuals with platforms," will be added as the fourth sentence of the paragraph. This change will be noted in the Errata section of the FEIR.

Comment 90

Page VII 6.6-127: The DFMP proposes the “management” of habitat recovery areas to advance the development of late successional forest conditions and potential for murrelet nesting. The DFMP is unclear on what management actions will be taken and where they will be taken relative to occupied and unoccupied murrelet habitat. To date, DFG is unaware of any scientific research that has specifically examined use and breeding success of murrelets nesting in stands modified to benefit murrelets. However, experimental research on creating murrelet habitat in JDSF may be warranted. DFG believes that it is imperative that any research performed to improve marbled murrelet nesting habitat conditions on JDSF be conducted in a scientifically rigorous manner with oversight from state and federal wildlife agencies as well as universities and groups such as the Marbled Murrelet Technical Committee.

Response to Comment 90

The Contribution to Recovery of Marbled Murrelet Habitat management measure described on DEIR Page VII.6.6-118-119 recognizes the need and desirability for a collaborative approach to silvicultural prescription development and other management measures. The protections provided to occupied Marbled Murrelet habitat are described in the DEIR and the regulatory framework under which forest management activities are conducted. We agree that any research activities as described should be scientifically rigorous and collaborative.

Comment 91

Page VII.6.6-128: Within the Vaux’s swift and purple martin section, there seems to be a partial discrepancy with the snag standards specified on page VII.6-6-114.

Response to Comment 91

To clarify, the retention standards on page VII.6.6-128 would apply on the “wildlife special concern areas” identified on page VII.6-6-114. Both sections describe a standard of three snags per acre, of which 2 have a DBH of 20 inches and at least one has a DBH of 30 inches or greater.

Comment 92

Page VII.6.6.130: Regarding tree voles, identify the basis for using the 100 meter dispersal distance in your analysis.

Response to Comment 92

The 100 meter dispersal distance used in the analysis is based on red-tree voles (a closely related species) and research by J.K Swingle Oregon Cooperative Wildlife Research Unit. Of 61 radio-collared voles in western Oregon, voles made occasional movements of 10-140 meters to nests in different trees. We judged 100 meters as an appropriate estimate of maximum vole dispersal capability for our analysis purposes.

Comment 93

Page VII.6.6.130: Regarding Pacific fisher, provide the rationale that the hardwoods management program benefits the species. The opposite is more likely.

Response to Comment 93

We do not believe that the hardwood management program will have a negative effect on the value of habitat for the Pacific fisher. The relative importance of large hardwoods as a habitat component is described in the Pacific fisher species account. Large hardwood trees (>36 inches DBH) potentially providing cavities and den site opportunity (as well as stand diversity) are retained per old-growth and hardwood management direction. Mast produced by hardwood trees may influence prey populations and foraging habitat quality. However, research reported (Zielinski and Truex) at a 2006 symposium (Fisher and Marten in California: Moving Science and Management Forward, The Wildlife Society, Western Section) noted that foraging opportunity and prey availability are not considered limiting factors to Pacific fisher habitat use. Resting and natal den habitat are likely limiting, at least in the Sierra Nevada bioregion.

Analyses conducted for each alternative that includes expected hardwood program implementation did not result in identification of a net negative impact to Pacific fisher habitat capability.

Comment 94

Page VII.6.6-130: Mentions “other habitat SCAs,” but these are not identified, described, located, or quantified in this chapter.

Response to Comment 94

Special Concern Areas including those developed with an associated habitat objective (e.g. Northern Spotted Owl sites, old-growth retention and augmentation, late seral development etc.) are mapped as Map Figure D. In addition, SCAs within JDSF are described on DEIR Page VII.6.3-41-6.3-42.

Part VII. 6.6.7, Mitigation and Monitoring

Comment 95

Page VII.6.6-131: Mitigation 1 implies that snags will be subject to removal after retention goals are met. Snags should not be removed except for safety purposes. Rather, if snags are above the retention goals, then it seems more appropriate to back-off the rate of green-tree retention for recruitment purposes. Under “monitoring, 1” the DEIR indicates that the DFMP establishes monitoring standards then indicates no changes in the standards are required? This is unclear. When referencing “monitoring standards”, is the document referring to the protocols, the statistics around the estimates, or is this statement referring to not changing the retention goals? In any case, monitoring should feed-back in the management loop to assure that the desired conditions are being achieved.

Response to Comment 95

Desired snag densities (see proposed FMP, Chapter 3) are generally not present on much of JDSF. Locations where snag densities would be so high (when averaged over a 160-acre subwatershed area) such that snags would be subject to removal are expected to be extremely unlikely. At the point that the snag retention goals of the proposed FMP are met, likely in the distant future in most cases, the largest/old growth snags would have a somewhat lesser priority for protection when conflicts like alignment of new roads is considered. However, there would be no automatic removal of all snags that are above those needed to meet minimum snag density goals.

Monitoring standards refers to the protocols of the monitoring methodology. See Chapter 5 of the proposed FMP.

Part VII. 6.6.8, Comparison of Alternatives

Comment 96

Page VII.6.6-133: The discussion of early stages of forest development model suggests that “early seral forest in this condition is not expected to persist to 2060.” Yet, the DEIR earlier states that the even to uneven-aged management proposal will be about 29% to 64%. What sort of management will the remaining 6% receive if not even or uneven-aged? In addition, group selections will provide early seral-stage values. This statement in the DEIR needs to be clarified.

Response to Comment 96

The intent of this paragraph was to illustrate what trends in early seral conditions might occur given the opposing trend in late-seral conditions. It is very unlikely that early seral stages of forest development will decline to zero. Group selection areas also will provide

early seral conditions, but in patches that do not exceed 2½ acres and that are dispersed within a matrix of young forest, producing an uneven-aged habitat condition at the stand scale.

Comment 97

Page VII.6.6-134: Why does the DEIR use Coastal Scrub CWHR to represent the earliest transitory stages of forest development of a forest type, which is essentially size class 1 within whichever forest type it is? Coastal Scrub is considered an intermediate coastal vegetation type.

Response to Comment 97

Coastal scrub was used as a placeholder and a timber growth and yield modeling convenience.

Comment 98

Page VII.6.6-134: as a limitation on the modeling approach, the DEIR should include the assumption that habitat elements are either fully present (or absent, depending on the element switches used). There should be a description of the crosswalk of forest vegetation to WHR, or at least the rules followed to make the assignments. The growth and yield models used to grow WHR types should be specified.

Response to Comment 98

Habitat elements such as snags, down logs, talus slopes etc. that could occur within the assessment area were assumed to be present in the CWHR analysis query design. Habitat elements not likely to occur were not included. Specific timber growth and yield models used to grow CWHR types and conversion of tree lists to CWHR types are detailed Appendix 7A, Description and Review of Inventory, Growth, and Yield.

Comment 99

Page VII.6.6-134: For the non-JDSF assessment area, the DEIR should describe how it was derived and either describe its geographic extent or map it. Why has the future of landowner's timber management programs not addressed hardwood control efforts? As various landowners achieve greater levels of success in hardwood control, hardwood types may become greatly diminished across the assessment area.

Response to Comment 99

A map of the geographic extent of the assessment area is included on DEIR Page V-14. The assessment area was based on watershed boundaries and derived from those watersheds that were contributing to the JDSF ownership or in receipt of conditions produced on JDSF. Coastal self-contained watersheds also were mapped.

Hardwood control activities and policies of adjacent landowners were unknown, not divulged, or speculative.

Comment 100

Page VII.6.6-135: The description for modeling MRC forests is confusing, especially the last 2 sentences.

Response to Comment 100

The Board adds the following text to the DEIR to clarify the paragraph: The 7% represents a large number of classes with a relatively small amount of acreage. They were modeled using the most closely associated CWHR type from the 93% that were individually modeled. This was a parsimonious approach that considered the types, resolution of modeling effort, and speculative nature of forecasting other ownership future behavior.

This change will be noted in the Errata section of the FEIR.

Comment 101

Page VII.6.6-135: Why the decline in total acreage in Table VII 6.6.15?

Response to Comment 101

Acreage totals vary by planning period given the requirement that type extent be at least 1% of the assessment area before included in the analysis as described for Figure VII.6.6.9. The amount of decline represented by this modeling artifact is less than one-half of one percent of the total area examined.

Comment 102

Page VII.6.6-137: The reference to harvest option “r1” needs a description/definition.

Response to Comment 102

Harvest option r1 allows removals based on diameter ranges by species.

Comment 103

Page VII.6.6-138: For NIPFs, is the assumption about which model (industrial, parks, and high-retained selection) supported by recent history?

Response to Comment 103

While future behavior of the NIPF is speculative due to the extremely broad and complex nature of forest ownership and management objectives, it was assumed that future behavior would be similar to that of the recent past. While the categorization utilized in the DEIR is relatively broad, it represents a reasonable estimate of past and future behavior.

Comment 104

Page VII.6.6-138: The increases as reported by percentages can be misleading. It would be easier to understand changes such as 3000+% for a couple of types as 30 x the current amount.

Response to Comment 104

Comment noted. We understand that different readers may be more comfortable with different ways of expressing the same thing (e.g., 3000% versus 30x change). We believe that using percentages provides a clear and readily understood way of communicating this information, while at the same time using a standard professional and technical means of quantitatively expressing change.

Comment 105

Page VII.6.6-138: The last paragraph seems in error. Is the projection that even-aged management will no longer be used in the assessment area? That does not reflect the assumptions stated above.

Response to Comment 105

The paragraph is based on model projections and is correct as written. Early seral stages of forest development are transitory, particularly when viewed at decadal increments. It is expected that even-aged management will continue to occur in the assessment area.

Comment 106

Pages VII.6.6-140 and 170: Figures such as VII.6.6.9 and VII.6.6.12 are too busy. They should be segregated into several figures by vegetation types to better reveal how age classes change over time. Eliminating any seral stage will be cause for concern and might necessitate management actions to assure that they are represented.

Response to Comment 106

Comment noted. The intent of the stacked bar charts is to illustrate visually the relative representation of habitat types over time. The numerical data used to develop the figures is also provided in a tabular format. The importance ascribed to modeled seral stage representation over time depends on several variables including starting acreage and relative ease with which its representation is renewed through management or forest successional processes.

Comment 107

Page VII.6.6-219: The definition of Total Edge Index appears incomplete. It suggests the units should be measured as length (e.g., feet), not percent.

Response to comment 107

The edge measure TECI indicated in the DEIR is incorrect; it should be Total Edge (TE) and is expressed in meters. The DEIR will be updated to reflect this correction. This change will be noted in the Errata section of the FEIR.

Comment 108

Page VII.6.6-221: What is the rationale behind the suitability groupings for scores?

Response to Comment 108

Habitat suitability groupings are based on the “none” (0), “low” (.33), “moderate” (.66) and “high” (1.0) ratings given a particular CWHR habitat type and stage for reproduction, foraging and cover. Fully suitable would be a CWHR habitat type and stage that is rated high for all 3 life functions (breeding, feeding and cover). Conversely, unsuitable would be a CWHR habitat type and stage that is rated low and/or none for all 3 life functions. Low and Moderate-High suitability are values calculated from other combinations of low, moderate or high for breeding, feeding, or cover.

Part VII.6.6.9, Alternatives Comparison

Comment 109

Page VII.6.6-260: It is not clear how Alt C1 and Alt C2 differ. Isn't the "Contribution to Recovery of Marbled Murrelet Habitat management measure" of C1 equal to "increase in the area (primarily in the vicinity of upper Russian Gulch, lower Big River, and upper Thompson Gulch) dedicated to development of late seral forest conditions specifically with the intent of Murrelet habitat recruitments" of C2?

Response to Comment 109

With implementation of the Contribution to Recovery of Marbled Murrelet Habitat additional management measure there would be no substantial impact difference between alternatives C1 and C2 relative to murrelet habitat recruitment and protection.

Part VII.10. Hydrology and Water Quality

Comment 110

Page VII.10-18: Water drafting during timber operations is typically done with a water ("pump") truck that diverts and stores 3,000-4,500 gallons of water. The water is primarily used for dust abatement, road construction and reconstruction, stream crossing construction and fire suppression. Pump trucks are capable of diverting 450 gallons per minute (approximately 1 cubic foot per second), but are regulated to diverting no more than 350 gallons per minute in addition to other (e.g. screen size) criteria as part of Fish and Game, Section 1600, diversion agreements. Pump truck(s) can make multiple (6+) trips per day to the same drafting site. Drafting sites are typically located in fish bearing (Class I) streams and non-fish, aquatic species habitat (Class II) streams. Some drafting sites employ water storage where the typical diversion involves gravity-feeding water through a screened intake (placed in the wetted channel) attached to a small diameter pipe that is attached to a water storage tank (typically plastic or metal and sometimes concrete capable of storing 3,000-10,000 gallons of water). Most Fish and Game Section 1600 diversion agreements contain conditions designed to minimize site-specific, potential stream impacts such as entraining or stranding fish, amphibians and aquatic insects. In order to evaluate potential cumulative impacts from multiple water drafting sites, either in the same stream order and/or in the same planning watershed, the EIR should provide a map of all known drafting sites in and adjacent to JDSF (where they affect streams flowing into JDSF). The EIR should estimate of summer base flows affected by these diversions, by which diversion rates can be more effectively evaluated on a watershed scale and for the purposes of spatially- and temporally-planning future stream diversions. How will water diversions be monitored to ensure that cumulative impacts from multiple diversion sites are not adversely impacting downstream aquatic resources?

Response to Comment 110

CAL FIRE has not identified all potential drafting sites within JDSF. The location of exact sites that are likely to be used is unknown at this time. There is potential for drafting to occur at literally hundreds of sites within the boundaries of JDSF. Where drafting does occur at a given site, or combination of sites, CAL FIRE will follow all of the existing regulations set by NOAA Fisheries, DFG, and the California Forest Practice Rules [including 916.9 (a)(4); 916.9 (r)]. The cumulative impacts of the drafting operation will be considered as part of the plan's potential onsite and downstream impacts. CAL FIRE will investigate other relevant drafting sites that are simultaneously being used on or off of JDSF. Water drafting tends to be localized to specific roads, where other forms of surface treatment have not been utilized. The assessment process for individual projects must include consideration of the appurtenant road system, as well as the aquatic system within the assessment area. Additional evaluation is provided by the Department of Fish and Game. The 1600 permit process is intended to include an assessment of potential environmental impacts associated with the use authorized by the permit.

Comment 111

Page VII.10-25: The hydrological importance of fog drip to redwoods, and redwood forest microclimate and associated vegetation is a well recognized environmental influence (Dawson 1998, Burgess and Dawson 2004). Cornell University ecologist, Todd Dawson, found that redwood leaves absorb water directly from the fog (thought to be a factor in the ability of rewoods to achieve great heights), and that about a third of the yearly moisture coming into the forest is actually coming from fog drip off the trees with the understory receiving about two thirds of their water from fog (twice as much as the redwoods themselves). In addition, when water samples (fog water and rainwater have distinctive chemical fingerprints) were taken from intact redwood forest and compared with clear cut redwood forest over a three-year period, the clear cuts were found to contribute less than half as much fog water to the forested environment.

Response to Comment 111

The Board agrees that fog drip plays an important role in the ecology of redwood forests. Summer fog influences the species composition of the coastal forest (Keppeler 1998). Recent timber harvesting plans have been challenged on the grounds that harvest of redwoods reduces water supply by eliminating the interception and delivery of fog water to the forest floor. To assess this potential impact, preliminary measurements of fog drip were made at 12 sites in 1998 in the Caspar Creek watershed on JDSF. During the summer of 1999, fog drip was measured within the 120-yr-old redwood Douglas-fir forest and in the open clearcut. Two 1-ha study plots were laid out under the canopy and instrumented with 6 randomly-located platform collectors. Two additional platform collectors were installed in nearby clearcut openings. The platform collectors had a projected surface area of 1.35 m^2 and were equipped with load

cells and electronic data loggers to monitor yields. In addition, five near-ridge locations within the drainage were volumetrically sampled with 4” cylindrical collectors.

Fog drip under the canopy was highly variable ranging from 0 to a maximum of 18 mm (0.70”) per event and 99 mm (3.89”) during the 1999 the season. But, within the forested plots where collectors were randomly located, seasonal fog drip under the canopy was only 3 mm greater than accumulations in the clearcut opening at one site, and not significantly different at the other. It was concluded that fog drip makes a highly variable but hydrologically insignificant contribution to groundwater and baseflow processes at Caspar Creek. Following timber harvest, streamflow increases due to reduced interception and transpiration exceed diminishment due to the loss of fog drip (Keppeler 2007).

Part VIII. Cumulative Effects

Part VIII.15, Cumulative Impacts Summary and Comparison Table

Comment 112

Pages VIII-102 through 104: Table VIII.14 shows that Alternatives B, C1, C2, and E rely on the Contribution to Recovery of Marbled Murrelet Habitat as mitigation. However, for reasons listed above, DFG believes that the proposed mitigation will be ineffective because it is unspecific, lacks clear short-term and long-term habitat goals, fails to include a feedback mechanism such as murrelet surveys, and does not provide a plan for the control and management of threats to marbled murrelets, such as human disturbance and nest predators.

Response to Comment 112

The Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat is also applied to Alternative “D.” Please see our response to Comments 80 and 81, above.

Comment 113

Pages VIII-102 through 104: The DEIR considers Alternatives E and F to have the potential for significant beneficial cumulative effects for marbled murrelets. DFG believes that benefits to marbled murrelets may only be slight, especially for Alternative E since murrelet retention and recruitment areas, if not well-chosen, monitored and controlled, could negatively affect murrelet breeding success through disturbance and predation. DFG believes that benefits to local marbled murrelet populations could be maximized through the implementation of a marbled murrelet management plan as described above. The plan would include the careful selection and retention of

sufficiently-sized and favorably located blocks of suitable and near-suitable habitat on the west side of JDSF as described in Alternative F. The protection and recruitment of JDSF lands adjacent to known occupied Russian Gulch State Park is critical. Within these blocks of habitat, suitable nesting conditions would be allowed to develop, threats to murrelets would be eliminated or minimized, and research and monitoring would provide a feedback loop to assess murrelet presence and use of the habitat as well as determining future habitat needs.

Response to Comment 113

The Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat is also applied to Alternative D, and is included in the proposed Administrative Draft Final Forest Management Plan. This measure will provide a planning process designed to address the concerns of DFG expressed here. Please also see our responses to Comments 80 and 81.

Comment 114

DFG believes that with the inclusion of a well-designed marbled murrelet management plan, the DFMP would be more consistent with JDSF's role as designated critical marbled murrelet habitat, and contribute more towards the recovery of murrelets in this part of its distribution as described in the Marbled Murrelet Recovery Plan. Future environmental documents pertaining to the DFMP should contain a marbled murrelet management plan. Without this, potential impacts to marbled murrelets from implementation of the proposed DFMP would not be fully mitigated.

Response to Comment 114

Please see our responses to Comments 2, 80, and 81.

Appendixes

Appendix 7B, Botany

Comment 115

There appears to be little site-specific data for known sensitive plants (such as location maps, number and phenology of plants, and observation dates). The DEIR should provide, at minimum, the CNDDB field form data such as in a tabular form.

Response to Comment 115

The DFMP includes information on which sensitive plants have been found on JDSF. Through surveys (see our responses to Comments 33-36) and observations over time,

CAL FIRE will improve the plant occurrence information in Map Figure L. The EIR analysis has focused on providing needed information without adding bulk. Some CNDDB occurrences are based on older records that originated from individuals not at JDSF, so the forest has no information beyond that in CNDDB. Since 2002 JDSF has submitted all new CNPS list 1 and 2 rare plant occurrences to CNDDB. The specific occurrence information is available to CNDDB users.

Comment 116

Appendix 7B-2, Page 2: the Mendocino County USGS 7.5' quadrangles for *Boschniakia hookeri* need to be updated to include Elk (CNDDB 2005)

Response to Comment 116

The appendix will be updated to clarify the date as 2005. This change will be noted in the Errata section of the FEIR.

Comment 117

Appendix 7B-2, Page 2: please note that the "s" on the species scientific name has been dropped for Thurber's reed grass (*Calamagrostis crassiglumi**s***), and this error has been repeated in the body of the DEIR.

Response to Comment 117

The spelling errors will be corrected. This change will be noted in the Errata section of the FEIR.

Comment 118

Appendix 7B-3: should include an analysis of the following three species with recent range extension into Mendocino County:

1. *Lathyrus palustris* marsh pea
2. *Oenothera wolfii* Wolf's evening primrose
3. *Trifolium buckwestiorum* Santa Cruz clover

Response to Comment 118

The Board recognizes that rare plant information is dynamic and that compiling a timely scoping list will be an ongoing process. Where new information or corrections provide better information about effects on plants, the DEIR has been updated. Neither the cumulative effects Functional Group analysis nor the list of potential plants of interest

needs to be updated because no new species would be added to the list of species potentially occurring on JDSF as a result of this exercise.

Appendix 11, Overview of Existing Sediment Studies Relevant to the JDSF EIR

Comment 119

Appendix 11 Page 19: It's stated that, *"Sediment budgets prepared for Noyo and Big River watershed assessments shows that road-related sediment (both from road surface erosion and road-related landslides) is a dominant source of sediment from current management activities, while in-unit hillslope erosion is a much smaller contributor."* Following this it's stated that, *"The Road Management Plan and the mass wasting avoidance strategy included in the JDSF Management Plan are expected to significantly reduce sediment yield associated with JDSF timber management activities."* The Road Management Plan contains comprehensive components such as a road inventory and improvement and abandonment strategies intended to reduce forest management-related sedimentation. What is not readily available in the DEIR is a discussion of trespass (primarily trail bikes and 4x4s) and the resulting impact on roads (breaking waterbars, etc.) and on stream crossings (eroding approaches, impacting aquatic habitat, etc.) Obviously, this is an ongoing problem for any large, land manager. Specifically, how can CDF, in its unique capacity to provide State law enforcement personnel, improve its past enforcement efforts to patrol the forest, implement disincentives for, and/or educate the public regarding this vehicular-trespassing impact? It's also apparent that, since JDSF's timber harvesting was suspended, road maintenance has been substantially reduced; apparently, because of a lack of funds. Future harvest reductions and other revenue depleting events (e.g., lumber market fluctuations) are a reality that should be planned and compensated for. Therefore, the EIR should detail how it will address future revenue short falls so that funds, equipment and personnel will be available to maintain, repair and even abandon JDSF roads and stream crossings.

Response to Comment 119

As noted under our response to Comment 3, a State budget change proposal approved in the 2006-07 has authorized JDSF expenditure of $640,000 per year of Forest Resources Improvement Fund revenues on an ongoing basis to address roads and stream crossing through implementation of the DEIR's proposed Accelerated Road Management Plan Additional Management Measure. Further, while the Road Management Plan process provides the overall mechanism for setting the priorities for reducing road related sediment, there also are likely to be opportunities associated with THPs to treat road sediment sources that may be significant, but not necessarily of the highest priority. This outcome is a function of how both State Forest finances and the Forest Practice Rules and THP process work. The management activity and cash flow associated with a THP present the opportunity to fix problems with roads appurtenant to proposed timber operations. These improvements must, at a minimum, meet the

requirements of the Forest Practice Rules, the results of the THP development and review process, the standards put forth in the Management Plan, and any further measures specified in the EIR. The annual budget to support the state forest is subject to approval by the governor and the legislature. It is beyond the ability of the Board and CAL FIRE to guarantee the annual budget. However, CAL FIRE in the 2006/07 fiscal year did succeed in securing an increase in the authorized level of funding and staffing. Over the past several years, the budget and personnel to support Forest security and road maintenance has been reduced, but not eliminated. JDSF is funded to support basic security and road maintenance activities, and also receives support from other resources within CAL FIRE. In addition, JDSF management personnel regularly perform basic patrol, inspection, evaluation, and maintenance of the forest infrastructure, reporting specific problems to maintenance and security staff.
Illegal use by on- and off-road vehicles is recognized on JDSF, but impacts associated with this activity tend to be localized. CAL FIRE enforces vehicle use restrictions within the Forest, and conducts regular patrol of the Forest. Seasonal road closures also are implemented to prevent damages during the wet-weather season. JDSF issues seasonal road availability notices that include written restrictions of vehicle use within the Forest. In addition, recreational maps and pamphlets inform the public of vehicle limitations and restrictions.
It bears noting that Alternative A would produce no timber harvesting revenues from JDSF, thus leaving unresolved the issue of how any funds would be available for operation of JDSF.

Maps

Comment 120

Figure L Natural Diversity Database: This appears to be the only map for sensitive plant occurrences on JDSF; however, the map does not distinguish what species are present and only notes “plant occurrences”. The EIR should provide a sensitive plant map for JDSF that delineates occurrences by species. In addition, wildlife species should also be noted on this map.

Response to Comment 120

Comment noted. Adding the attributes suggested by the commenter was considered but rejected since the map would be less readable and contain too much information at the map scale used. Map Figure L provides information on wildlife and terrestrial community occurrences at the same level of detail as plant occurrences.

Thank you for your detailed comments on the JDSF Draft Management Plan and DEIR. We look forward to the implementation of a new management plan on JDSF and to working with the Department of Fish and Game as an important partner in the protection and enhancement of the State's fish, wildlife, and habitat.

Sincerely,

Stan L. Dixon
Chairman

Attachments (2)

Attachment 1

DFG Comment Letter on DEIR

Attachment 2

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Mar-01-2006 05:38pm From-CA SENATE /RM #5100 916 323 6958 T-305 P.002/004 F-310

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ENVIRONMENTAL QUALITY
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California State Senate

SENATOR
WESLEY CHESBRO
SECOND SENATORIAL DISTRICT

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MOBILE & MANUFACTURED HOMES

A-6

March 1, 2006

California Board of Forestry and Fire Protection
PO Box 944246
Sacramento, CA 94244

Re: Jackson Demonstration State Forest

Dear Chairman Dixon and Members of the Board:

1 The management of California's largest state forest, Jackson Demonstration State Forest, is an issue of broad and pressing public concern. We strongly believe that the management of the Jackson Demonstration State Forest must reflect the best of forward thinking forest sciences, resource protection, community involvement and State leadership.

2 While Jackson is in better condition than the surrounding industrial timberlands, management practices and choices at the forest have made Jackson a centerpiece of controversy. In 2004, the Legislature sent a bill to the Governor to force some changes in the management at Jackson; regrettably the Governor failed to sign that bill.

Fortunately, the Board of Forestry and Fire Protection has the opportunity to make the changes necessary to reduce the ongoing controversy and move Jackson's management into the 21st Century. We hope it is helpful for us to share our views on this matter.

3 First, it is critical to recognize that Jackson's role for the state is significantly different than it was even 10 years ago. Over the past decade, California has witnessed the precipitous decline of a number of endangered species. Most notable for this discussion is the extreme decline of coho (and other) salmon, and the marbled murrelet. As you are aware, the Federal government recently changed the status of coho salmon in the region around Jackson from threatened to endangered. Similarly, the murrelet has been listed as endangered for many years, but its numbers continue to decline at an alarming rate. Additionally, both principal watersheds at Jackson are listed as water quality impaired due to logging-related impacts.

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Mar-0[illegible]-2006 05:38pm From-CA SENATE /RM #5100 916 323 6958 T-305 P.003/004 F-310

4 We remind you of these facts to give context to our first request – that Jackson Forest be managed first and foremost to protect the public trust resources of California. It is the responsibility of the state to ensure the protection and restoration of public resources such as water quality and endangered species. Clearly, we have not done an adequate job.

5 Jackson is the *only* large publicly owned redwood forest in the Mendocino/Sonoma County area. It is incumbent upon the state to focus actions at Jackson on recovering endangered species and protecting other public trust resources. The forest's mandate calls for "consideration" of public trust values. We believe "consideration" in this context logically requires maximizing the conservation benefit from our publicly owned forest. **To accomplish this goal, we urge you to adopt a management plan at Jackson that is *at least* as protective of water quality, fish and wildlife as "Alternative F" in the Draft Environmental Impact Report.** That approach provides heightened conservation for endangered species and water quality, while allowing the Department of Forestry to continue research and demonstrations and maintain a substantial commercial logging program.

6 Secondly, there are several issues and practices that the general public finds unacceptable, particularly in our public forest, including logging of ancient trees, even-aged management, and herbicide use. The Citizen's Advisory Committee convened during the Wilson administration made near-consensus recommendations to sharply limit the use of even-aged management and herbicide use, and both the Mendocino County Board of Supervisors and the Fort Bragg City Council, have recently gone on record supporting those recommendations. We add our voice to the call to end even-aged management except as necessary for credible, well-documented scientific experiments. Of course, it is entirely unacceptable to be logging any ancient trees on our state-owned forests – they are a diminishing part of our natural heritage that should be preserved for future generations.

7 Finally, we recognize that many local elected officials have emphatically recommended that a greater proportion of the proceeds from timber production at Jackson be used to further the management goals at Jackson, including accelerated road rehabilitation, facilities maintenance, increased staffing, research, demonstration, and dissemination of forest management information. We support that call and will work to make sure that the State Budget provides a reasonable and secure level of funding for Jackson Demonstration State Forest.

Mar-01-2006 05:39pm From-CA SENATE /RM #5100 916 323 6958 T-305 P.004/004 F-310

8 The Mendocino County Jackson Demonstration State Forest has the potential to be a model of cooperation that demonstrates economic substantiality with forests products, commercial and sport fisheries, tourism and recreation. Thank you for your service on the Board and for your consideration of our views.

Sincerely,

DON PERATA
President Pro Tempore

WESLEY CHESBRO
State Senator, 2nd District

DEBRA BOWEN
State Senator, 28th District

GILBERT CEDILLO
State Senator, 22nd District

JOE SIMITIAN
Chair, Environmental Quality Committee

WC:bf

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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SACRAMENTO, CA 94244-2460
Website: www.bof.fire.ca.gov
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December 21, 2007

Senator Don Perata, President pro Tempore
Senator Joe Simitian
Senator Gil Cedillo

RE: Responses to Senators' Comments on the Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan

Dear Senators:

Thank you for your March 1, 2006 comments on the Jackson Demonstration State Forest (JDSF) Draft Environmental Impact Report (DEIR). Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter A-6, a copy of which is attached. Please note that since the release of the DEIR, the Board of Forestry and Fire Protection (Board) subsequently released a Recirculated Draft Environmental Impact Report (RDEIR) to examine a new alternative, Alternative G, which, among other elements, would provide a research-driven mission for JDSF.

Response to Comment 1

The Board concurs that "the management of the Jackson Demonstration State Forest must reflect the best of forward thinking forest sciences, resource protection, community involvement, and State leadership." The proposed Administrative Draft Final Management Plan for JDSF, which is based on Alternative G, and other Board actions, reflect these considerations in many ways, including:

- Providing a research-driven mission for the Forest;
- Providing high levels of protection for watercourses, old growth, and wildlife;
- Designating over one-third of the Forest for the development of late seral forest and older forest conditions;
- Reestablishment of the Board's Committee on Forest Research; and
- Close collaboration with the Department of Forestry and Fire Protection on the establishment of a new advisory body for JDSF;

Response to Comment 2

Comments noted. The Board believes that it is taking steps that will substantially reduce the ongoing controversy over the management of JDSF.

Response to Comment 3

Alternative G and the proposed Administrative Draft Final Management Plan, which is based on Alternative G, provide for very substantial protections for fish, wildlife, and water quality. These protections include:

- Designating Class I and II watercourse protection zones for the development of late seral forest conditions;
- A process for assessing the need for recruitment and placement of large woody debris for enhancement of in-stream habitat;
- Designation of over one-third of the forest for development of older forest conditions, including a 1,549-acre area specifically for recruitment of Marbled Murrelet habitat;
- An Accelerated Road Management Plan to identify and address roads that have the potential to produce, large quantities of sediment.

Response to Comment 4

Alternative G and the proposed Administrative Draft Final Management Plan for JDSF, as detailed in part above, would both provide very high levels of protection to the public trust resources of California. Your acknowledgement (see comment 2) that JDSF is in better condition than the surrounding industrial timberlands is indicative of the fact that this has always been a goal of management at JDSF. The proposed new management would take this commitment to an even higher level.

Response to Comment 5

The Board believes that Alternative G or the proposed Administrative Draft Final Management Plan for JDSF would provide a level of protection to water quality, fish, and wildlife that is similar to Alternative F.

Response to Comment 6

Alternative G and the proposed Administrative Draft Final Management Plan for JDSF that is based on Alternative G would put in place substantial restrictions on the use of herbicides and evenaged management, particularly clearcutting. All old growth groves would be fully protected and harvest of individual old growth trees outside of the groves would be severely restricted.

Response to Comment 7
Legislative changes made to the Forest Resources Improvement Fund and to the authorized expenditure level for the Demonstration State Forest Program in 2006 substantially improved the fiscal framework for JDSF. However, until harvesting resumes on JDSF and meaningful revenues begin to flow into the Fund, the potentials of this new framework, including the activities cited in your comment, cannot be achieved fully.

Response to Comment 8

The Board concurs with your observations on the potential for JDSF.

Thank you for your comments on the JDSF Draft Management Plan and DEIR. We look forward to the implementation of a new management plan on JDSF.

Sincerely,

Stan L. Dixon
Chairman

Attachment

A-7

RESOLUTION NO. 2923-*2006*

RESOLUTION OF THE FORT BRAGG CITY COUNCIL STATING A POSITION ON THE DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR JACKSON DEMONSTRATION STATE FOREST (JDSF)

1 **WHEREAS,** Fort Bragg is fortunate to be located within a very few miles of Jackson Demonstration State Forest, the largest of the state forests. Because of our proximity, the Fort Bragg City Council has had numerous opportunities to consider management issues at Jackson. We appreciate the long hours and hard work put into the forest's management by the California Department of Forestry and its employees. We know staff to be strongly dedicated to making Jackson a forest we can all be proud of; and

WHEREAS, we make the following observations and recommendations regarding management at Jackson Demonstration State Forest and the Alternatives presented in the December 2005 draft Environmental Impact Report (DEIR); and

2 **WHEREAS,** the legislative directive 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" provides important direction for decision makers; and

3 **WHEREAS,** our area has historically been identified with production of high quality timber, and we believe that Jackson can help maintain that tradition by focusing most of its timber management on maximizing the sustainable production of mature saw logs, roughly speaking, those from 80-120 year-old Redwood trees. Lumber from these older trees has the superior characteristics that made redwood famous: a beautiful red color, relatively straight grain, load-bearing ability from thick and wide beams, and rot resistance, characteristics that command a higher price at the lumber yard; and

WHEREAS, maximizing this unique resource of high quality timber for timber production and maintenance of the natural surroundings of the region are both important to our local economy; and

4 **WHEREAS,** intense community concern over even-age management and the application of herbicides has existed for a very long time.

5 **NOW, THEREFORE, BE IT RESOLVED**, that the Fort Bragg City Council does hereby support Alternative D, which balances environmental values, economic viability, public support, and promotes the vision and leadership needed to sustain a healthy forest products infrastructure in California.

6 **FURTHERMORE, BE IT RESOLVED**, that the Fort Bragg City Council also wishes to communicate its strong recommendation to the Board of Forestry that they protect the public's investment in Jackson Demonstration State Forest by doing its utmost to assure a sustainable level of funding for forest operations and maintenance, road rehabilitation, environmental science staff, and a robust recreation and forest education program.

7 **FURTHERMORE, BE IT RESOLVED**, that the Fort City Council also wishes to communicate its strong recommendation that an emphasis is placed on the sustainable

7 harvest of mature high quality Redwood in the 80-120 year range, making sure that as measured per decade, the forest-wide inventory of Redwood stands 80-120 years old be gradually increased until the point is reached when a substantial continuous yield of that mature timber can be regularly harvested.

The above and foregoing Resolution was introduced by Councilmember Turner, was seconded by Councilmember Melo, and passed and adopted at a regular meeting of the City Council of the City of Fort Bragg held on the 13th day of February, 2006, by the following vote:

AYES:	**Councilmembers Gjerde, Baltierra, Hammerstrom, Melo, and Mayor Turner.**
NOES:	**None.**
ABSENT:	**None.**
ABSTAIN:	**None.**

Dave Turner,
Mayor

ATTEST:

Cynthia M. VanWormer, CMC,
City Clerk

A-7a

CITY OF FORT BRAGG
Incorporated August 5, 1889
416 N. Franklin St.
Fort Bragg, CA 95437
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RECEIVED BY
MAY 26 2006
BOARD OF FORESTRY
AND FIRE PROTECTION

May 22, 2006

George D. Gentry
Executive Officer
State Board of Forestry and Fire Protection
PO Box 944246
Sacramento, CA 94244-2460

Re: Clarification of Resolution No. 2923-2006

RESOLUTION OF THE FORT BRAGG CITY COUNCIL STATING A POSITION ON THE DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR JACKSON DEMONSTRATION STATE FOREST (JDSF)

Mr. Gentry:

1 The City of Fort Bragg would appreciate an opportunity to clarify its position on the future management of Jackson Demonstration State Forest (JDSF). Our citizens strongly support a management approach on JDSF that balances research, recreation, restoration, habitat enrichment, and the leadership needed to sustain a healthy forest products infrastructure.

2 In particular, the City of Fort Bragg would like to encourage an emphasis on the sustainable harvest of mature high quality Redwood in the 80-100 year range, and see that age class gradually increased until a substantial continuous yield of that mature timber can be regularly harvested.

3 Resolution 2923-2006 from the City of Fort Bragg supported Alternative D. The information we had at that time indicated that the entire forest was available for management. Since then, information has been provided demonstrating that, over time, in excess of 55% of the forest will be removed from active management under Alternative D. If true, the consequence of this would have a significant negative impact on the balance of the objectives stated in the first paragraph of this letter.

4 We do not have the expertise to analyze such cause and effect. One of the reasons the Fort Bragg City Council unanimously supported Alternative D was that the DEIR represented 24.9 MMBF in annual harvest the first decade, and 53.2 MMBF per year in subsequent years. If actual sustainable harvest

4 under Alternative D falls below that of Alternative C1 or C2 in subsequent decades, we would encourage the Board of Forestry to incorporate the best aspects of all the alternatives to create a management plan that truly develops the balance we are all seeking, with an emphasis always on Alternative D when possible.

Please distribute to the Board members.

Sincerely,

Dave Turner
Mayor

Dan Gjerde
Mayor Pro Tempore

Brian Baltierra
Councilmember

Doug Hammerstrom
Councilmember

Jere Melo
Councilmember

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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December 21, 2007

Doug Hammerstrom, Mayor
Fort Bragg City Hall
416 N. Franklin Street
Fort Bragg, CA 95437

RE: Responses to the City of Fort Bragg Comments on the Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan

Dear Mayor Hammerstrom:

The Board of Forestry and Fire Protection offers its thanks to the City of Fort Bragg for its February 13, 2006 resolution regarding the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan, plus the subsequent letter of clarification. Our responses to these comments are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letters A-7 and A-7a, copies of which are attached. We are preparing a separate response to the comments that the City submitted with respect to Alternative G and the 2007 Recirculated Draft Environmental Impact Report (RDEIR).

Response to A-7 Comment 1
Comment noted.

Response to A-7 Comment 2
The Resolution cites Public Resources Code section 4639, which defines the term "management" for the Demonstration State Forests, including JDSF.

Response to A-7 Comment 3
Comment noted.

Response to A-7 Comment 4
The Board has received substantial comment on the issues of herbicides and evenaged management. The proposed Administrative Draft Final Forest

Management Plan includes Alternative G's substantial measures limiting the usage of herbicides and evenaged management (see Chapter 3 for details). This plan limits evenaged management to no more than 2,700 acres per decade, with additional specific restrictions on clearcutting. The use of herbicides is limited to certain purposes. Further, in an operational context, herbicides will be used only when no other effective and feasible control methods are found after consideration of the scope of the problem, opportunities to effectively manage the situation, and available alternatives and their potential effectiveness, costs, and risks.

Response to A-7 Comment 5
Comment noted. Following the release of the Alternative G RDEIR and the close of public comment on that document, the Board is considering the proposed Administrative Draft Final Forest Management Plan that is based on Alternative G. The Board believes that this plan will achieve the balance cited in the comment.

Response to A-7 Comment 6
The Board is committed to do what it can to ensure that JDSF is adequately funded to carry out the functions cited in your comment. To conduct these activities at a meaningful level, resumption of an active timber management program at JDSF is necessary to provide revenues to the Forest Resources Improvement Fund.

Response to A-7 Comment 7
The Board anticipates that the management approach provided in Alternative G or in the proposed Administrative Draft Forest Management Plan, including provisions for managing over one-third of the Forest for older forest conditions, will result in increasing yields of mature timber being harvested over time on a sustainable basis.

Response to A-7a Comment 1
The Board believes that Alternative G and the proposed Administrative Draft Final Forest Management Plan based on Alternative G would achieve the balance described in the comment.

Response to A-7a Comment 2
See response to A-7 comment 7, above.

Response to A-7a Comment 3
Comment noted. The proposed Administrative Draft Forest Final Management Plan based on Alternative G would only remove specific, limited areas of the Forest from active management, such as the existing old growth groves (about 450 acres), cypress groups (about 250 acres), the Jughandle Reserve (247 acres), and pygmy forest (about 613 acres).

Response to A-7a Comment 4
In developing Alternative G and the proposed Administrative Draft Final Forest Management Plan based on Alternative G, it was the Board's goal to incorporate the best aspects of all the alternatives examined, to give full consideration to all the public comment received, and to establish a research-driven mission for JDSF. The Board believes that it has developed balanced management approaches during this process. In the RDEIR, it was estimated that implementation of Alternative G would result in average annual harvests in the range of 20-25 million board feet (MMBF) per year. The proposed Administrative Draft Final Forest Management Plan establishes that, given the various management constraints and goals of the Plan, the annual harvest is expected to be in the range of 20-25 MMBF per year and may not exceed 35 MMBF.

Sincerely,

Stan L. Dixon
Chairman

Attachments

cc: Members of Fort Bragg City Council

A-8

From: Kevin L. O'Hara [ohara@nature.berkeley.edu]
Posted At: Monday, February 13, 2006 4:02 PM
Conversation: JDSF DEIR

Subject: JDSF DEIR

To:
George D. Gentry
Executive Officer
Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

Dear Mr. Gentry,

Please accept these formal comments on the Jackson Demonstration State Forest Draft Environmental Impact Statement. I am Professor of Silviculture at the University of California - Berkeley. I conduct a variety of research projects at Jackson and regularly take forestry classes to Jackson on fieldtrips. Among the research projects either underway or in recent years are included a large trial of precommercial thinning in young mixed redwood stands, development of guidelines for multiaged silviculture, development of leaf area prediction tools, "sudden oak death"
treatments, growth of young sprout clumps, and studies on the development and leaf area of various stand structures. Jackson is also an important destination for UC-Berkeley forestry classes because it offers the opportunity to see a great variety of management treatments at one
location: a significant point that enhances the learning experience of students who can compare these treatments on similar sites and logistically maximizes the exposure of students in a limited time frame.

Jackson can best meet the dual research and education objectives that concern researchers/educators like me by maintaining a diversity of stand structures and management treatments. These would include a diverse array of regeneration treatments and the intermediate operations such as thinnings that direct stands towards different developmental pathways. The diversity of stand structures at Jackson should include even-aged systems, including clearcutting, in this mix of stand structures. These even-aged structures will facilitate future research that requires relatively simple stand structures and best emulates the management on private lands in the redwood region. Jackson has traditionally been the best place in the redwood region for accommodating research because they do not operate on a for-profit basis and because they have commitment to facilitate research that may take many decades to reach fruition.

I therefore recommend alternative B as being the alternative that best meets the objectives of facilitating research and demonstration for a diversity of forestry research. Alternatives C1 and C2 are also acceptable. Alternatives A, D, E and F would appear to fail to meet the mandate of a research and demonstration forest and are therefore not acceptable.

Please contact me if I can provide any additional information on any of these points.

Thank you.

Kevin L. O'Hara
Professor of Silviculture
University of California - Berkeley
510 642-2127

1

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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December 21, 2007

Kevin O'Hara, Professor of Silviculture
Dept. of Environmental Science, Policy & Management
137 Mulford Hall, MC3114
Berkeley, CA 94720-3114

RE: Responses to Comments on the Recirculated Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan

Dear Mr. O'Hara:

The Board of Forestry and Fire Protection offers its thanks to you for your February 13, 2006 letter regarding the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter E-107, a copy of which is attached.

Response to Comment 1
Support of Alternative B and qualified support of C1 and C2 noted. The Board recognizes the important role of JDSF for research and educational purposes (see General Response 2). The Board further recognizes the importance of maintaining a viable outdoor laboratory by managing the forest to create diverse stand and habitat types, including even-aged management areas (see General Response 10).

The Board has developed a management plan utilizing elements from several alternatives that strives to balance the concerns of all Californians while remaining consistent with the legislative mandate and Board policy for the state forest system. The management plan, as approved, uses a set of structural goals to guide planned harvest actions. The central goal is not a particular level of timber harvest or a preferred method of harvesting but a set of forest structures that represent the full breadth of forest conditions. The ADFFMP is designed to balance demonstration and research, production of timber products, and the desires of the public, while improving the overall health and ecosystem function of the forest.

Sincerely,

Stan L. Dixon
Chairman

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

RECEIVED BY
MAR 6 - 2006
BOARD OF FORESTRY
AND FIRE PROTECTION

LA 1

March 1, 2006

In response refer to:
151010SWR2006SR00128:CAA

George D. Gentry
Executive Officer
Board of Forestry and Fire Protection
P. O. Box 944246
Sacramento, California 94244-2460

Dear Mr. Gentry:

The National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), has reviewed portions of the Draft Environmental Impact Report (DEIR) for the Jackson
1 Demonstration State Forest (JDSF) Management Plan (DFMP) and submit the following comments for your consideration. Comments are focused on the species pertinent to JDSF: Central California Coast Coho Salmon and Northern California Steelhead. The management and recovery of these species fall within the regulatory jurisdiction of NMFS and are listed as endangered and threatened species, respectively, pursuant to the federal Endangered Species Act (ESA) of 1973, as amended.

JDSF, located in coastal Mendocino County, California, is the largest State-owned forest with a unique ecological diversity of flora and fauna. This unique diversity presents an opportunity to highlight and demonstrate forest managements' compatibility with these natural resources. NMFS strongly supports comments by others regarding the need for JDSF to elevate research and
2 demonstration. The State is facing extensive forest conversion and fragmentation; such issues as the economics of stewardship, advancements in silvicultural practices, source income for local economics, improving regulatory processes and relationships and compliance with all State and Federal laws would advance dialog on these issues and should be a strong emphasis of the management plan for the forest.

3 In July 2002, NMFS provided comments on the May 2002 draft DFMP and EIR for JDSF; these comments are provided as an enclosure due to their applicability to the current EIR.

Salmon and Steelhead Status Information and Recovery Planning

4 In the interest of document length and relevance, discussions regarding the threatened Southern Oregon/Northern California Coast coho salmon in the Klamath, Eel, and Smith rivers should be de-emphasized. JDSF is fully within the range of the Federally endangered Central California Coast coho salmon; a species that continues to decline precipitously. In fact, the subpopulations in the southern portions of the range are either nearing extinction or have become extirpated. Mendocino

4 County streams maintain the highest abundance of coho salmon across the range and maintaining and improving conditions within these watersheds is critical for their conservation. JDSF supports a relatively high number of streams with good quality, and/or high potential, salmonid habitats occupied by coho salmon. These state-owned lands will be important refugia and recovery habitats for this species.

5 Correct, where appropriate, listing information for Central California Coast coho salmon. This species was recently upgraded by NMFS from threatened to endangered in the final rule published June 28, 2005, with the effective date beginning August 29, 2005 [70 FR 37160].

6 Provide a succinct list of the anadromous salmonids pertinent to JDSF and their state and federal listing status (See VII 10-17).

7 As a state managed forest, JDSF should outline its' responsibilities to meet recovery planning needs of the State of California for the State endangered coho salmon and those for Federally listed salmonids.

8 Was the State Coho Recovery Plan reviewed and were any recommendations used by JDSF?

9 Federal Endangered Species Act (ESA) Information

The ESA information provided in the document needs revision. Following are ESA excerpts for consideration:

- Section 2(b) outlines the purposes of the ESA [which] are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection [2](a).
- The ESA authorizes the listing, delisting, or reclassification of a species, subspecies, or Distinct Population Segment (DPS), as defined under the Act (50 CFR §424.02(k)). NMFS has determined that DPSs are represented by Evolutionarily Significant Units (ESUs) for Pacific salmon, and treats ESUs as a "species" under the ESA (56 FR 58612, November 20, 1991). Steelhead ESUs have been reclassified as DPSs (71 FR 834, January 6, 2006).
- Section 4(a) directs the Secretary to determine whether a species is endangered or threatened solely on the basis of the best scientific and commercial data available to him after conducting a review of the status of the species and after taking into account those efforts, if any, being made by any State or foreign nation, to protect such species.

10 Linking Data to Prescriptions

Extensive watershed/fisheries data and information are provided but other than the avoidance for mass-wasting sites and a Road Plan, it is unclear how these data had bearing on the development of riparian prescriptions, protection measures and restoration activities. The effects of forestry

10 operations to salmonids and watershed processes are widely and locally documented. Ligon *et al.* 1999 provides an extensive review of California's forest practices and their effectiveness in protecting steelhead and salmon and their habitats. NMFS Federal Register Notices listing salmon and steelhead in California outline the habitat-modifying activities that the agency believes "harms" salmonids and significantly impairs their essential behavioral patterns.

11 When evaluating "threshold of significance", consider whether prescriptions have been designed to avoid "take" or "harm" to Federally listed salmonids.

Water Temperature

12 Six days of a maximum weekly average maximum temperature of 16.8 Celsius (C) would preclude coho salmon if the JDSF temperature threshold of significance is applied (Hines and Ambrose 2000). Therefore, the temperature threshold is inappropriate and requires further refinement in order to fully protect this species.

13 The temperature threshold of significance should be adjusted based on time of exposure (number of days) once a maximum weekly average maximum temperature (of the seven day moving maxima) exceeds 14.5C.

14 Watersheds with current or historic coho salmon presence should be outlined as a high priority for temperature restoration/protection. Standard watercourse and lake protection zones for all
15 watercourses should be evaluated and adjusted to reflect the site-specific needs and available data.
16 Considerations for canopy are important, but should not be considered without acknowledging the other interacting variables that affect temperature such as sediment loading, large woody debris, catchment size, solar radiation, and cool water inputs from groundwater, Class II and III streams.

Sediment Discussions

17 The development of a Road Management Plan and a Mass-Wasting Avoidance Strategy are commendable and important elements of the forest management strategy; regardless of the Alternative eventually chosen. The strategy was formulated from strong field research and evidence. The links between best available information and data, current condition and proposed actions are clear.

18 NMFS recommends that JDSF consider prioritizing areas based on: (1) delivery hazard: likelihood, and volume, of sediment to be delivered to fish-bearing streams; (2) current condition: current and future cumulative channel conditions; and 3) resource vulnerability: response of salmonids to current and future sediment inputs.

19 Many unstable slope areas included in Timber Harvest Plans are required to be identified and evaluated by a professional geologist. Changes in the proposed timber operations proposed by these professionals may lower the risk for sediment delivery to streams but their evaluations do not include what risks there are to salmonids should sediment actually be delivered. On a site specific
20 basis, additional unstable slope recommendations may be needed to lessen the level of risk of harm and/or take associated with the proposed activity beyond those proposed by the geologists.

Channel Geomorphology

21 Floodplain and offchannel habitats need additional discussion. Prescriptive measures for riparian zones within floodplains should consider the 20-year and 100-year flood-prone zones. Buffer scenarios should consider these as no harvest to provide floodplain processes with buffers that extend the distance of one site potential tree height.

Closing Points

22 JDSF has outlined, and research suggests, that a buffer width the distance of a site potential tree height provides for the processes and functions needed for salmonids; NMFS agrees. As the buffer decreases from this distance (and composition/structure are altered) the effectiveness of the riparian area to provide shade, debris, nutrients, large woody debris, channel function, and so on for salmonids is reduced. Thus, it would be more appropriate and rationale for JDSF to develop buffer criteria based on a site potential tree height (coast redwood Site I or II would translate to approximately 250 feet) to build prescriptions (and restoration activities) based on site-specific needs, salmonid resource vulnerability and available data. Monitoring should provide feedback to

23 an adaptive management strategy that adjusts protections, mitigations, strategies and restoration actions as appropriate.

Thank you for the opportunity to review the JDSF DFMP. If you have any questions or would like to meet with staff regarding comments in this letter please contact Charlotte Ambrose at (707) 575-6068 or via email at charlotte.a.ambrose@noaa.gov.

Sincerely,

Dick Butler
Santa Rosa Area Office Supervisor
Protected Resources Division

Enclosure

– Enclosure

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
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JUL 18 2002

F/SWR3:CAA

Mr. Christopher P. Rowney
Deputy Chief, State Forest Program
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Dear Mr. Rowney:

Thank you for the opportunity to comment on the Jackson Demonstration State Forest (JDSF) Draft Environmental Impact Report (EIR) and associated Draft Management Plan (DFMP) dated May 2002. National Marine Fisheries Service (NOAA – Fisheries) fully supports the efforts of the State of California to adopt a long-term management plan for JDSF.

Site specific watershed analyses used to create meaningful timber management strategies in California are important to State and Federal efforts to protect and recover listed anadromous salmonids. The efforts of JDSF, in developing a draft EIR and Forest Management Plan, are laudable work towards a watershed and ownership program that can be protective of aquatic resources. NOAA – Fisheries however, has concern with the apparent prevailing philosophy at JDSF that because modern practices are improved these practices provide adequate protection to aquatic resources. For example a statement in the DFMP: "The potential effects to fish populations and aquatic communities from each alternative are significantly less than during pre-modern FPR operations (DFMP May 2002 Draft)," is part of the argument asserting that prescriptive measures reduce adverse affects to a less-than-significant level. Thus, these measures provide for habitat needs of Federally listed anadromous salmonids. NOAA - Fisheries believes this underlying philosophy and the thresholds of significance analysis regarding aquatic resources are fatal flaws of the DFMP. Therefore, the following comments focus more on the mechanisms driving the prescriptions than on details of the prescriptions themselves.

Major concerns of NOAA – Fisheries include:

- Prescriptive measures that appear disconnected from the goals and objectives described in the intent language.

  There is no discussion by JDSF regarding how post harvest stand conditions of 240 square feet basal area translates to the appropriate forest composition, structure and function

(e.g., management used to support and encourage native forest type; basal area by species and age class; conifer canopy versus hardwood canopy; how will post-harvest stand functions to support anadromous salmonid habitats?).

- Application of forest practice standards identified as inadequate for the protection of anadromous salmonids.

  For example, the system of stream classification used by JDSF has little basis in science (Noss, 2000). According to Noss (2000), if relevant scientific data were considered, wider buffers would be provided on headwaters (CDF Class II and III streams). Also, Ligon et al. (1999), indicates that the stream and its floodplain should be considered together as the channel zone. While the DFMP indicates that no operations will occur in channel migration zones, it is unclear how active floodplains are protected. Additionally, how is JDSF addressing cumulative effects across spatial and temporal scales? Effects from timber harvest activities have been found to be more difficult to detect on smaller spatial scales than larger spatial scales. THP activity at the watershed scale has effects to microclimate and other watershed products that cannot necessarily be detected on smaller scales. Chen et al. (1999), found correlations between harvest activity and degraded microclimate variables at the landscape scale which were not detectable at the stand level scale.

- Ambiguity of how science (e.g., research conducted on JDSF as well as other research relevant to the redwood region) facilitated the design of the proposed forest management.

  It is unclear how research, conducted on the forest, contributed to the design of the currently proposed prescriptions as well as how it will contribute to the future of JDSF.

- Lack of a described strategy to avoid "take" (or "harm") to Federally listed anadromous salmonids.

  Absent an Endangered Species Act (ESA) section 4(d) limitation on the take prohibitions for forestry activities in California or an ESA section 10(a)(1)(B) permit, the legal standard for timber harvest operations in California is no take. JDSF must avoid harming anadromous salmonids when conducting timber management activities. The goal of the DFMP to "minimize the potential for adverse impacts to aquatic habitat, fish migration, riparian habitat, aquatic species populations" is inappropriate without Federal incidental take authorization. JDSF cannot mitigate for unauthorized "take" of Federally listed anadromous salmonids.

The EIR and DFMP do not support the assertion that JSDF timber harvest will avoid take of Federally listed salmonids. We are confident that this issue can be resolved, and would also encourage the State to explore mechanisms available under the ESA which provide incidental take authorization. The DFMP could provide a strong foundation to a section 10(A)(1)(B) Habitat Conservation Plan, and incidental take permit.

If you have any questions or comments about this letter please contact Mr. Dick Butler at (707)575-6058.

Sincerely,

Patrick J. Rutten
Northern California Supervisor
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cc: James L. Lecky, NMFS
Joe Blum, NMFS

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STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

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December, 21 2007

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Dear Mr. Butler:

Thank you for your comments on the Jackson Demonstration State Forest (JDSF) Draft Environmental Impact Report (DEIR). Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter LA-1, a copy of which is attached. Where our response to your comments indicates a change to the DEIR or the Draft Forest Management Plan, the change is indicated in **boldface type**. The literature cited in our responses to comments is compiled in an attachment to this response letter. Please note that since the submission of these comments, the Board has released the Recirculated Draft Environmental Impact Report (RDEIR) for Alternative G. Also at this time, the Board is considering for approval the Administrative Draft Final Forest Management Plan for JDSF, which is based on Alternative G.

Response to Comment 1

The Board of Forestry and Fire Protection (Board) recognizes the importance of Central California Coast coho salmon and Northern California steelhead in the context of the management of Jackson Demonstration State Forest. The proposed JDSF Draft Forest Management Plan (DFMP), Alternative G, and the proposed Administrative Draft Final Forest Management Plan for JDSF provide substantial provisions for the protection and restoration of habitat for these species. Further protection and habitat improvement mechanisms are provided in the DEIR, such as the Additional Management Measures for an Accelerated Road Management Plan and for Large Woody Debris Survey, Recruitment, and Placement (see p. VII.6.1-96 to -98 of the DEIR). These measures are incorporated into Alternative G and the proposed Administrative Draft Final Forest Management Plan, which is based on Alternative G.

Response to Comment 2

The Board concurs as to the special ecological conditions of JDSF and as to the important research and demonstration opportunities that these conditions provide. In its review of the DFMP, DEIR, RDEIR, and the related pubic comments we received, the Board has particularly

noted the substantial current role that research plays at JDSF and the opportunity to build on this to create a top-tier research forest. Perhaps the best example of what can be accomplished at JDSF is the Caspar Creek watershed study, in operation since 1962, and with a signed memorandum of understanding between CAL FIRE and the USDA Forest Service expected to continue to at least 2100. The goals and objectives of the research and demonstration program, along with summaries of past projects are covered in detail in the DFMP.

The Board has paid close attention to the findings on forest conversion and fragmentation that were presented at the California Forest Futures Conference held in Sacramento in May 2005. Much of the Forest is proposed to be managed with silvicultural systems similar to those in use by small nonindustrial forest landowners, with the hope that what is learned from managing these stands can be applied to their parcels, reducing the likelihood of further forest fragmentation.

Research and demonstration programs at JDSF have addressed issues such as the economics of stewardship, advancements in silvicultural practices, and income for local economies. JDSF has historically provided, and under the proposed management plan will continue to provide, significant opportunities for improving regulatory processes, relationships, and compliance.

For example, JDSF was utilized as the site of a CAL FIRE study to examine and test various methods of shade canopy sampling. The Forest has also been the site of numerous field studies by representatives of various regulatory agencies. A recent workshop examined the extensive large woody debris loading study sites within the Forest for potential application to restoration efforts elsewhere within the region. CAL FIRE's Forest staff have made numerous presentations to the Board of Forestry regarding demonstration projects that have been directly related to new rules under consideration by the Board, such as Variable Retention silviculture. The Caspar Watershed Project has provided an abundant source of information that has been broadly reviewed and considered in deliberation of rules related to assessment of cumulative effects. As a part of providing CAL FIRE with direction for the development of the final management plan for JDSF, the Board has called for increased use of JDSF for multi-agency tests of the efficacy of different practices to address current regulatory concerns.

Response to Comment 3

The National Marine Fisheries Service (NMFS) Comments of July 2, 2002 (letter PR-32) concerning the May 2002 DFMP and DEIR were addressed as part of the response to comments developed by CAL FIRE for the 2002 FEIR (letter of September 19, 2002). JDSF forest management as proposed in the DFMP and as further modified by the DEIR and RDEIR, and as proposed in the Administrative Draft Final Forest Management Plan will avoid take of listed species. Additionally, the current proposed alternative is different from that of 2002 and includes enhanced watercourse protections such as an Accelerated Road Management Plan. Therefore, comments generated by NMFS in July 2002 are only partially applicable to the current DEIR, the RDEIR, or the Administrative Draft Final Forest Management Plan. All comments generated by NMFS in letters of July 2, 2002 (PR-320) and March 1, 2006 (LA-1) relevant to the current DEIR are addressed in the CAL FIRE (2002 FEIR) and the Board of Forestry and Fire Protection (2007 FEIR) responses to those comments, respectively.

Response to Comment 4

Discussion of the threatened Southern Oregon/Northern California Coast coho salmon ESA is included in the DEIR to provide the reader with a regional context of coho status. The status of coho in Mendocino County and on JDSF specifically is described in the DEIR on pages VII.6.1-60 to -64 and DEIR pages VII.6.1-72 to -84. The Board agrees that JDSF provides important refugia and recovery habitats for salmonid species and believes that the DFMP (as modified by the 2005 DEIR), Alternative G, or the proposed Administrative Draft Final Forest Management Plan would continue to provide this habitat.

Response to Comment 5

The recommended edit will be implemented on DEIR pages VII.6.1-2, VII.6.1-60, and VII.6.1-88. The Central California Coast coho was upgraded from threatened to endangered in the final rule published June 28, 2005 with the effective date being August 29, 2005.

Response to Comment 6

Page VII.10-17, 4th paragraph, will reflect the recommended edit:

Central California Coast Coho: federal endangered
State endangered
California Coastal Chinook: federal threatened
Northern California Steelhead: federal threatened

Response to Comment 7

JDSF measures to meet recovery planning needs are described in DEIR Pages VII.6.1-85 to -98 and Section VIII Cumulative Effects DEIR Page VIII-66 to -89.

Response to Comment 8

The Board recognizes the importance of JDSF to the maintenance and improvement of coho salmon numbers, distribution, and ultimate attainment of recovery goals at the scale of the recovery unit and the ESU. CAL FIRE reviewed the State Coho Recovery Strategy recommendations in addition to other relevant and available biological information that could be applied to the development of management measures specific to Jackson Demonstration State Forest. The Recovery Strategy for California Coho prepared by the Department of Fish and Game and associated recovery goals and delisting criteria were extensively reviewed by CAL FIRE. Particular attention was paid to the management recommendations for the Central California Coast ESU and Mendocino Coast Hydrologic Unit.

Caspar Creek and the North Fork of Big River were identified in the Recovery Strategy as key populations to maintain or improve in the Mendocino Coast Hydrologic Unit of the central California Coast ESU. Recovery strategy goals pertaining to number of spawning adults, stream specific coho presence or stream miles restored were not specific to these streams by either the recovery strategy or recent updates to that document. The California Department of

Fish and Game and NMFS are continuing to collect and evaluate data pertinent to delisting criteria targets that are specific to recovery units. However, the DEIR identifies and describes a variety of management measures to prevent take, improve habitat conditions and population status, and contribute to recovery. These measures include an accelerated road management plan, and WLPZ management to enhance streamside shading and recruitment of LWD. These measures and others described in the DEIR are expected to further reduce sedimentation and improve stream temperatures, instream shelter, and fish passage as recommended in the Recovery Strategy. These measures are incorporated into Alternative G and the Administrative Draft Final Forest Management Plan.

Response to Comment 9

Section 6.1.6 Regional Salmonid Population Status DEIR page VII.6.1-53 and prior to the Coho Salmon subsection will be augmented with the recommended Federal Endangered Species Act excerpts.

Response to Comment 10

In addition to the noted measures (avoidance of mass-wasting sites and the Road Management Plan), research and data also contributed to the overall riparian management prescriptions contained in the DFMP, as well as the Additional Management Measure for Large Woody Debris Survey, Recruitment, and Placement.

Research conducted on JDSF contributed to the development of prescriptions in many ways. Surveys conducted by CDFG, Napolitano (1998), and others that showed many of the watercourses were deficient in LWD helped determine the riparian retention standards to increase wood loading. Water temperature monitoring conducted over the past several years helped determine overstory canopy retention standards. Spawning gravel embeddedness, V* estimates, and sediment bulk samples pointed out the need to reduce sediment delivery to streams and influenced the decision to generally restrict tractor yarding to slopes less than 35 to 40%, whereas the Forest Practice Rules allow ground-based skidding on slopes up to 65%. The work conducted by Cafferata and Spittler (1998) identified shallow landsliding problems associated with roads, which influenced the design of the Road Management Plan. Identification of timber types, stand inventories, and growth and yield modeling had a major influence on determination of the allowable harvest and preferred silvicultural prescriptions. Continued research results will assist in the adaptive management philosophy incorporated into the DFMP and the proposed Administrative Draft Final Forest Management Plan (see Chapter 5, Monitoring and Adaptive Management).

Specific riparian protection measures adopted in the DFMP that reflect existing research and data include the following. Class I and II WLPZs will maintain a minimum of 240 ft^2 per acre of conifer basal area. JDSF will maintain appropriate forest composition by following all applicable Forest Practice Rules such as 14 CCR 916.5, which states the stand configuration will contain the diversity of species similar to that found prior to operations. Stand structure will be maintained by the minimum overstory retention standards of 85% and 70% in the inner and outer WLPZ bands respectively. In addition, structure and function will be maintained by use of no-cut/limited entry for habitat improvement zones of at least 25 feet wide on Class I and Class II watercourses. The LWD protections provided by the Additional Management Measure for Large Woody Debris Survey, Recruitment, and Placement is designed to return stands adjacent

to Class I and Class II streams that are not currently meeting wood loading target levels to proper function by using thin-from-below silviculture (retains codominant, dominant, and predominant trees) or no-cut zones. The thin-from-below silviculture will be used to promote the development of large trees in what are currently relatively dense, small diameter stands to encourage LWD delivery to streams at a faster rate than if left alone. Over time, this approach should help support and improve anadromous habitat in Class I and Class II streams deficient in LWD. The Additional Management Measure for Large Woody Debris Survey, Recruitment, and Placement also provides direction for placement of large woody debris in Class I through Class III streams. The high overstory canopy retention proposed in the DFMP is expected to lower water temperatures below those that were achieved under the formerly utilized Forest Practice Rule standards that required 50% overstory retention without any no-cut zones. The increased canopy standards on JDSF will complement the canopy standards that were increased on surrounding private lands under the Forest Practice Rule for Threatened and Impaired Watersheds applied beginning in 2000.

DEIR pages II-10 through -14 describe the programmatic nature of the DEIR and its relationship to individual project development and implementation. Thus, in addition to the baseline practices contained in the DFMP and DEIR, it is critical to note that riparian prescriptions, restoration and other activities are developed on a site- and project-specific basis that must be CEQA compliant. For example, the Forest Practice Rules provide minimum standards (in addition to those found in the DFMP and DEIR) but further require a separate CEQA analysis of each Timber Harvesting Plan (THP), including review and recommendations by other agencies such as the National Marine Fisheries Service and the California Department of Fish and Game. The consultation generally produces additional site-specific recommendations for protection and recovery of aquatic species and their habitat. The Board believes that the combination of minimum standards (as specified in the DFMP, DEIR, the proposed Administrative Draft Final Forest Management Plan, and Forest Practice Rules) and review of each THP, with application of additional, management measures as required, provides a system that produces the necessary level of protection.

Response to Comment 11

DEIR Section 6.1.15 Thresholds of Significance (Page VII.6.1-98) identifies those impacts considered significant under PRC Section 21001 and the CEQA Guidelines. Items 1 and 4 under this list specifically address potential impacts to federally listed species.

JDSF must avoid “take” or “harm” of federally listed species because it cannot mitigate for unauthorized “take” or “harm” of federally listed species absent a Endangered Species Act section 4(d) limitation on take prohibitions for forestry activities in California or an ESA section 10(a)(1)(B) permit. The NMFS is provided the opportunity to review and comment on all JDSF THPs relative to take, harm, and other project-generated impacts.

See also the response to Comment 10.

Response to Comment 12

As documented in Hines and Ambrose (2000), the thermal stress of a specific temperature on salmonids increases with time of exposure. While prolonged exposure to a given temperature condition is an important consideration, affecting growth and fitness as well as site occupancy, it

may be better evaluated at the project level. As noted in the study by Hines and Ambrose the performance of the statistical model that derived the threshold curve improved with the incorporation of many site specific habitat parameters (i.e., pool depth, boulder cover, LWD, etc.). For the programmatic EIR, MWAT was used as a metric because it is widely used and provides an indication of chronic exposure. Based on a 7-day average by definition, it incorporates a length-of-exposure component into a single metric. In addition, the use of MWAT as a water temperature threshold allowed the DEIR to evaluate a longer data record and to include measurements that were collected by adjacent landowners.

We recognize that temperatures above 16.8º C have been shown in studies to be associated with an absence of coho in the Mattole River (Welsh et al. 2001) and Redwood Creek (Madej and others 2006). Although, other studies have shown coho present at temperatures that exceed 16.8º C. Frissell et al. (1992) report coho occurrence at temperatures exceeding 20º C, but more importantly coho density decreased linearly with increasing temperatures from 17º C. The Board and CAL FIRE are committed to supporting the recovery of coho salmon and are working toward obtaining temperature targets that represent optimum conditions where they can be feasibly achieved. In addition, JDSF will work within the guidelines of the DFG Coho Recovery Plan, the Big River Temperature TMDL, and associated responsible agencies (NMFS, California Department of Fish and Game, and the North Coast Regional Water Quality Control Board) to continue monitoring temperature data and revising temperature thresholds as needed.

In addition, given the emphasis of the DFMP, Alternative G, and the proposed Administrative Draft Final Forest Management Plan on developing and protecting late seral forest in riparian areas (see response to Comment 3) it is likely that the proposed plan will lead to improved habitat and temperature conditions.

Response to Comment 13

MWAT has been shown to be an appropriate metric for evaluating water temperature impacts on salmonids (Sullivan et al. 2000). In addition, the use of MWAT as a water temperature threshold allowed the DEIR to evaluate a longer data record and to include measurements that were collected by adjacent landowners. JDSF maintains an on-going monitoring program that would allow for the evaluation of a number of different water temperature metrics. The principle type of project with potential to impact water temperature is the THP. The Department of Fish and Game and the North Coast Regional Water Quality Control Board are members of the review team, and participate in the review of THPs. This process provides these agencies with an opportunity to make recommendations regarding maintenance or improvement in water temperature conditions for salmonids.

A threshold value of 14.5º C may indeed represent an optimum temperature regime that fully protects coho and promotes optimum growth (Sullivan et al. 2000, US EPA 2001). The Board is committed to working towards this temperature as a target in streams where an MWAT of 14.5º C is realistic and achievable. The DEIR chose a threshold of 16.8º C since values above that range are a likely indicator of impairment and suggest the need for further protection and/or recovery. Temperatures below this range have been shown to provide conditions that support salmonids, and the threshold value is also well below any known lethal limits for salmonids (Brett 1952, Brungs and Jones 1977, RWQCB 2000, Sullivan et al. 2000, US EPA 2001).

Response to Comment 14

Streams with current coho salmon presence have been identified in the DEIR (Map Figure E – Stream Class, Fish Distribution, and Passage Barriers). The historic distribution is not well known, but has recently been estimated as part of a NMFS study on historical coho distribution (NMFS 2005). The estimated historical extent of coho is very similar to current conditions on the Noyo River, but does extend a little further into tributaries along the North and South Forks of the Big River. Most of these areas are outside of JDSF, but are within the larger assessment area. Streams that currently and historically supported coho are recognized in the DFMP as Special Concern Areas. All planning watersheds within JDSF either currently support or historically supported coho. As such, it is not practical to place one watershed as a higher priority than another. Rather, all riparian areas bordering Class I and Class II streams (inclusive of current and historic coho streams) are considered Special Concern Areas (SCA) and will be managed to promote the development of late seral forest stand conditions (DEIR, VII.6.3-8; VII.6.3-26) and receive a substantial range of protections, which have been identified in a number of the responses to comments above. The late seral emphasis in riparian areas is expected to improve canopy cover over current conditions in the Watercourse Lake Protection Zones (WLPZ) and contribute to reaching desired temperature targets for coho.

Further, canopy cover retention targets for Class I and Class II streams are designed to avoid or minimize impacts to stream temperatures and are consistent with or exceed WLPZ widths and canopy retention objectives as outlined in the Board of Forestry 2000 Threatened and Impaired Watersheds rule package (DFMP, p. 70-71; DEIR, p. VII.6.6-118 to -122; proposed Administrative Draft Final Forest Management Plan, Chapter 5). The management emphasis in riparian areas recognizes the importance of temperature restoration/protection and is expected to improve conditions over time.

Response to Comment 15

The riparian protections provided in the DFMP, DEIR, RDEIR, Alternative G, and the proposed Administrative Draft Final Forest Management Plan ensure a minimum, standard level of protection for all Class I and Class II streams. These protections include stand structures that maintain a minimum overstory retention standard of 85% and 70% in inner and outer WLPZ bands respectively. The structure and function of the WLPZ will also be maintained by the use of no-cut zones that may vary depending upon canopy retention and recruitment needs for individual streams. Refer to the draft JDSF management plans and the DEIR for a detailed discussion of the specific protections for WLPZ areas (DFMP, p.70-71; DEIR, p. VII.6.1-91 to -98; Administrative Draft Final Forest Management Plan, Chapter 5).

The zones bordering Class I and Class II streams are considered Special Concern Areas. Management goals within the WLPZ for Class I and Class II streams include the development of late seral conditions (DEIR, p. VII.6.6-91 to -92). In addition to the standard level of protection, any site specific needs will be evaluated on a project-by-project basis by a JDSF staff Registered Profession Forester (RPF) and adjustments to the standard WLPZ requirements, as described in the DFMP (p.70), the DEIR (p. VII.6.1-90 to -98), and the proposed Administrative Draft Final Forest Management Plan (Chapter 5) will be made as needed. The site-specific review process for THPs is further discussed under the Response to Comment 10, above. Further, in-stream monitoring for water temperature, sediment and stream habitat surveys provide information that can be used to evaluate the adequacy of WLPZ protections.

The Board agrees that each stream reach and watershed has unique characteristics. In addition to the above-described approach to addressing this at the project level, the buffer size and management restrictions within a given WLPZ that are needed to provide a sufficient level of protection also can provide research questions that could be incorporated into the research agenda for the Forest.

Response to Comment 16

The DEIR discusses many of the factors other than canopy cover that influence water temperature (see, e.g., DEIR, Appendix 12, p. 21). However, an emphasis is placed on canopy cover because it has been shown to be a very important parameter and is greatly influenced by management practices. In addition to water temperature JDSF conducts stream surveys and regularly conducts studies related to sediment loading. Further, JDSF has noted the historic practices that have lead to stream reaches that are deficient in LWD and has conducted projects to add LWD both to improve habitat conditions and to promote water quality benefits. In particular, the DEIR incorporates an Additional Management Measure Large Woody Debris Survey, Recruitment, and Placement. This measure is included in Alternative G and the proposed Administrative Draft Final Forest Management Plan.

Response to Comment 17

The Board concurs that application of a Road Management Plan and a Mass Wasting Avoidance Strategy are important considerations for all of the DEIR and RDEIR alternatives. The need for these approaches in forest management has been clearly demonstrated through both research and practical experience. Alternative G and the proposed Administrative Draft Final Forest Management Plan incorporate a management measure for an Accelerated Road Management Plan.

Response to Comment 18

The Board largely agrees with NOAA Fisheries regarding Road Management Plan prioritization. Scheduling is one of the six main components of the Road Management Plan presented in the DFMP. As described in the DFMP and DEIR, the Road Management Plan consists of a sequential process that involves an inventory and prioritization phase prior to scheduling of specific repairs. Prioritization of repair sites will be based primarily on the potential to impact critical habitat for steelhead and coho salmon, and secondarily on existing rates of sediment delivery to sensitive watercourse channels and likely hazards such as high density of riparian roads or stream crossings. The schedule for implementing road repairs and abandonment projects identified in the road inventory is not currently known and cannot be determined until completion of the inventory phase and assignment of priorities. Note that the DEIR and the proposed Administrative Draft Final Forest Management Plan both incorporate an Additional Management Measure for an Accelerated Road Management Plan process. Changes made to the CAL FIRE budget for the 2006/07 fiscal year authorize a funding level of $640,000/year for road assessment and improvement work. However, a significant amount of the actual funds needed to meet this level will only become available as JDSF returns to active timber management.

Response to Comment 19

The potential impacts to salmonids from sediment input are discussed in the Aquatic Resources chapter of the DEIR (see, for example page VII.6.1-12). An engineering geologist for the California Geological Survey (CGS) works under contract to CAL FIRE on JDSF. Further, other CGS geologists, as well as Department of Fish and Game staff and in some instances NMFS staff, review proposed harvests on JDSF as a part of the THP review process. Past experience has shown that all of these geologists and the other involved resource professionals are well aware of the presence and status of salmonids on JDSF and take the sediment sensitivity of these species and their habitats into account in formulating their recommendations regarding THP activities.

Response to Comment 20

The general guidelines provided in the DFMP or the proposed Administrative Draft Final Forest Management Plan, combined with site-specific assessments, are designed to reduce the risk of sediment entry from unstable areas on JDSF. See the DFMP (p. 71-72), the DEIR (p. VII.7-30 to 31), or the proposed Administrative Draft Final Forest Management Plan (Chapter 5) for a description of the specified hillslope management approaches. Where operations are proposed on potentially unstable slopes on JDSF, site-specific investigation by a licensed Professional Geologist will occur. Input from fisheries biologists on in-stream conditions will be included in project planning and implementation.

Response to Comment 21

The Board agrees that adequate floodplain protection is critical for restoration of properly functioning aquatic habitats for JDSF. This issue was discussed by an interagency Riparian Protection Committee (RPC) during several meetings held in 2005 (Cafferata and others 2005). DFG biologists clearly indicated that management proposed within the 20-year recurrence interval floodplain in a watershed with anadromous fish habitat (particularly coho salmon habitat or restorable habitat) requires detailed analysis. There was no indication from fisheries biologists present on the RPC that the 100-year flood prone area was critical for fisheries resources. The RPC was made up of representatives of the Department of Fish and Game (4 members), North Coast Regional Water Quality Control Board (3), CGS (1), and CAL FIRE (1).

Rather than designate the entire 20-year-flood-prone area as a no-harvest zone or providing a set no-cut riparian buffer strip equal to the height of one site potential tree, the Board believes that the detailed procedure agreed to by the multi-agency RPC for flood prone area in the coast redwood region will provide proper protection and restoration. This process was presented in a final report endorsed by all the participating agencies titled “Flood Prone Area Considerations in the Coast Redwood Zone” (November 2005) that is available at: http://www.fire.ca.gov/rsrc-mgt_content/downloads/RiparianProtComWhitePaperfinal.pdf.

The agencies jointly presented this report to the Board of Forestry and Fire Protection at our November 2005 meeting in Sacramento. In summary, the basic procedure agreed to by the agencies was to:

- Inventory flood prone areas for all of the hydrologic, geomorphic, and biological functions present that may be affected by proposed timber operations.
- Determine the category of inundation of the flood prone area proposed for management.
- Conduct an appropriate analysis for the functions present in light of possible significant adverse impacts from management.

The RPC report states that disclosure and analysis requirements increase with increased risk associated with the proposed level of activity and with the increased frequency of inundation of the flood prone area. The agreed procedure specifically states that management proposed within the 20-year recurrence interval floodplain with anadromous fish habitat (including restorable habitat) requires detailed analysis. Further, the RPC report states that while using the 25-year-old-tree Forest Practice Rule for defining the watercourse transition line (WTL) and the start of the Class I WLPZ for unconfined channels may provide for adequate amounts of shading and large wood recruitment with laterally stable channel systems, the other floodplain functions must also be considered—which may require expansion of WLPZ beyond 150 feet and inclusion of other mitigation measures as necessary. It also states that in laterally unstable channel systems with active channel migration zones and/or active bank erosion, standard WLPZ widths will not be appropriate for flood prone areas.

The Administrative Draft Final Forest Management Plan includes language indicating that flood prone areas within JDSF will be managed according to procedures included in the Riparian Protection Committee's Final Report, which was produced by a committee that included several fisheries biologists and licensed geologists.

Response to Comment 22

The DEIR reviews literature that shows that the vast majority of large wood recruitment, shading, and nutrients (functions most critical for properly functioning aquatic habitats), are provided by riparian buffer strips of 100 to 150 feet in non-flood prone areas (see, e.g., DEIR p. VII.6.1-8 to -10 re LWD, p. VII.6.1-10 to -11 re detritus inputs, p. VII.6.1-13 to -15 re stream shading and microclimate). Additionally, the DFMP and the proposed Administrative Draft Final Forest Management Plan specify that riparian zone widths are to be expanded where appropriate (e.g., unstable areas, etc.).

In flood prone areas (i.e., areas within a 20-year recurrence interval flood prone area), procedures specified in the Riparian Protection Committee's (RPC) final report titled "Flood Prone Area Considerations in the Coast Redwood Zone (November 2005; available at: http://www.fire.ca.gov/php/rsrc-mgt_content/downloads/RiparianProtComWhitePaperfinal.pdf) will be followed (as discussed under Response to Comment 21).

Alternative G and the proposed Administrative Draft Final Forest Management Plan provide for the designation of three Riparian Restoration Demonstration Areas on the Forest for the purpose of experimenting with different stream buffer prescriptions. Any necessary state or federal permits will be sought as experiment objectives and treatments are identified.

Response to Comment 23

JDSF is committed to both hillslope and instream monitoring to provide an adaptive management feedback loop that will allow management practices to be altered where needed to

provide proper protection that will lead to aquatic habitat recovery. These methods are described in detail in the DFMP and the proposed Administrative Draft Final Forest Management Plan (Chapter 5, Monitoring and Adaptive Management). One example of this process is CAL FIRE's commitment to continued stream temperature monitoring and its willingness to adapt projects as needed to lessen the risk of impacts to stream temperatures.

Thank you for your comments on the JDSF Draft Management Plan and DEIR. We look forward to the implementation of a new management plan on JDSF and to continuing to work with the National Marine Fisheries Service as an important partner in the protection and enhancement of California's fisheries and the habitat that supports them.

Sincerely,

Stan L. Dixon
Chairman

Attachment: Literature Cited

Attachment

Literature Cited in Board of Forestry and Fire Protection Responses to National Marine Fisheries Service Comments on the Jackson Demonstration State Forest Draft Management Plan and Draft Environmental Impact Report

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Comments on 2007 Revised Draft EIR

KRISTI FURMAN
Clerk of the Board

A-9

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COUNTY OF MENDOCINO
BOARD OF SUPERVISORS
501 Low Gap Road • Room 1090
Ukiah, California 95482

RECEIVED BY
JUL 16 2007
BOARD OF FORESTRY
AND FIRE PROTECTION

June 26, 2007

Mr. George Gentry, Executive Director
Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento CA 94244-2460

RE: Support of JDSF Alternative G

Dear Mr. Gentry:

1 At its meeting of June 26, 2007, the Mendocino County Board of Supervisors unanimously voted to support Alternative G of the JDSF Recirculated DEIR, including the recommendations of the Mendocino Working Group (MWG).

2 The Mendocino County Board of Supervisors considers Alterative G to be the most viable management plan to balance recreation, environmental protection, and sustainable timber production.

3 Further, the Board supports the creation of an Advisory Committee that will include local representation and play an important role in the management plan. However, it is our position that any review by an Advisory Committee will not unnecessarily delay the 2008 JDSF Timber Sales Program as outlined in MWG's letter.

4 The Board wishes to commend the Board of Forestry, CDF staff, and local community stakeholders on the collaborative and inclusive process utilized to arrive at the current proposed Alternative.

5 The Mendocino County Board of Supervisors respectfully urges your adoption of Alternative G with incorporations from the Mendocino Working Group, as outlined in their letter dated June 20, 2007.

Sincerely,

Kendall Smith

Kendall Smith, Chair
Mendocino County Board of Supervisors

cc: Members, MWG
Members, Mendocino County Forest Council
Mr. Greg Giusti, Forestry Advisor, U.C. Davis Cooperative Extension

THE BOARD OF SUPERVISORS

MICHAEL M. DELBAR	JIM R. WATTENBURGER	JOHN PINCHES	KENDALL SMITH	J. DAVID COLFAX
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STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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SACRAMENTO, CA 94244-2460
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Kendall Smith, Chair
Mendocino County Board of Supervisors
501 Low Gap Road, Room 1091
Ukiah, CA 95482

RE: Responses to the Mendocino County Board of Supervisors Comments on the Recirculated Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan Alternative G

Dear Ms. Smith:

The Board of Forestry and Fire Protection offers its thanks to the Mendocino County Board of Supervisors for its June 26, 2007 letter regarding the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. Our responses to the Board of Supervisors' letter are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter GMF-27, a copy of which is attached.

Response to Comment 1

The Board of Forestry and Fire Protection has directed staff to develop an Administrative Draft Final Forest Management Plan that is based on Alternative G. This draft Plan is consistent with many, although not all, of the Mendocino Working Group's recommendations.

Response to Comment 2

The Board of Forestry and Fire Protection agrees that Alternative G and the proposed Administrative Draft Final Forest Management Plan based on Alternative G provide an appropriate balance among numerous concerns.

Response to Comment 3

The Board of Forestry and Fire Protection has proposed direction regarding a JDSF advisory body as a part of the Administrative Draft Final Forest Management Plan. This direction includes recognition of the need for local representation on the body. The

Board of Forestry and Fire Protection shares your concerns that advisory processes not unnecessarily delay the 2008 timber harvest program on JDSF.

Response to Comment 4

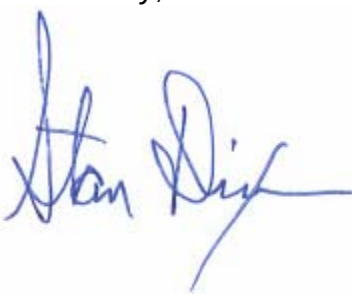
The Board of Forestry and Fire Protection appreciates your support for the collaborative processes that led to the development of Alternative G and also would like to recognize the efforts of the Board of Supervisors and the Mendocino Forest Council in these processes.

Response to Comment 5

Please the response to comment 1.

We thank the Board of Supervisors for its ongoing interest in the management of JDSF and its comments on the environmental review and management planning processes. We look forward to the implementation of a new management plan on JDSF and to working with the Board of Supervisors and the Mendocino County Forest Council as important partners in the management of JDSF.

Sincerely,



Stan L. Dixon
Chairman

Attachment

cc: Members of Board of Supervisors

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

A-10

June 27, 2007

George Gentry
State Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

RE: SCH# 2004022025, Jackson Demonstration State Forest Management Plan; Mendocino County.

Dear Mr. Gentry:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

✓ 1 Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
- If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
- If any known cultural resources have already been recorded on or adjacent to the APE.
- If the probability is low, moderate, or high that cultural resources are located in the APE.
- If a survey is required to determine whether previously unrecorded cultural resources are present.

✓ 2 If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
- The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
- The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.

✓ 3 Contact the Native American Heritage Commission for:
- A Sacred Lands File Check. **USGS 7.5-minute quadrangle name, township, range, and section required.**
- A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**

✓ 4 Lack of surface evidence of archeological resources does not preclude their subsurface existence.
- Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.

5
- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.

6
- Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst

CC: State Clearinghouse

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

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December 21, 2007

Katy Sanchez
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento CA 95814

RE: SCH# 2004022025, Jackson Demonstration State Forest Management Plan, Mendocino County

Dear Ms. Sanchez:

Thank you for commenting on the Jackson Demonstration State Forest (JDSF) Management Plan with your June 27, 2007 letter. The Board of Forestry and Fire Protection (BOF) are continuing to make progress in the development of a revised management plan and completion of the California Environmental Quality Act (CEQA) process for JDSF. The BOF is the lead agency for approval of the revised management plan and the CEQA process. The Department of Forestry and Fire Protection (CAL FIRE) shares your concern about heritage resources (i.e., all forms of archaeological, historical, and other cultural resources) and wants to assure you that every effort will be made to identify and protect them during future projects that occur on JDSF.

Projects on JDSF are of two types: Timber Harvesting Plans (THPs) that are regulated by the provisions of the California Forest Practice Rules (Title 14, California Code of Regulations Chapters 4, 4.5 and 10) which implement the Z'Berg-Nejedly Forest Practice Act (Division 4, Chapter 8, Public Resources Code); and non-THP projects, which will be reviewed as prescribed by the revised management plan, once it has been approved and adopted by the BOF. Because adoption of the JDSF Management Plan by the BOF is a project subject to CEQA as defined by the statute and the CEQA Guidelines, the BOF as lead agency has prepared a Draft Environmental Impact Report (DEIR) for consideration and certification prior to the BOF's approval and adoption of the revised Management Plan. Although the Final EIR for the JDSF Management Plan has not yet been adopted, because management direction regarding heritage resources is essentially the same under each of the alternatives under consideration, reference is made below to relevant portions of the DEIR and the Draft JDSF Management Plan that address the procedures to be followed in the review of non-THP projects.

I have outlined below the major recommendations presented in your letter and have provided information regarding procedures designed to accomplish a satisfactory response to each.

Comment 1: *Contact the appropriate regional archaeological Information Center for a record search.*

Response to Comment 1: A records search at the Northwest Information Center (NWIC) of the California Historical Resource Information System (CHRIS) was completed during the development of the draft JDSF Management Plan. As discussed below, CAL FIRE maintains its own database of cultural resource information for JDSF. We use this in-house database as the primary source for project planning. This provides us with a more direct and efficient tool for checking known cultural resource locations within the Forest. This procedure is authorized by the State Historical Resources Commission and the California Board of Forestry and Fire Protection (see 14 CCR Section 895.1 definition of current archaeological records check) as long as the CHRIS NWIC database is reviewed at least once every five years. This requirement for five year updates ensures that CAL FIRE's use of an in-house database utilizes complete and current information. The procedure also provides the opportunity to provide the NWIC with all the information we have in our files. We completed the five-year update at the NWIC for the JDSF parcel on April 9, 2002 during the cultural resource study conducted for the draft Management Plan. Another five-year update was requested on April 8, 2007 and completed on June 11, 2007.

The following discussion explains how our in-house database is used.

The California Forest Practice Rules (14 CCR § 929.1(a)(1)) require that each timber harvesting plan contain a current (less than 5 years old) archaeological record search from the appropriate regional Information Center. The records searches contain information regarding any previous archaeological surveys that may have taken place within the area of potential effect (APE), whether or not any previously known cultural resources have been recorded within or adjacent to the APE, whether the probability for finding cultural resources within the APE is low, moderate, or high, and whether a survey to locate previously unrecorded cultural resources is required/recommended.

As stated in the Draft JDSF Management Plan (Chapter 2, page 38), the Department maintains a comprehensive database of the known heritage resources located within JDSF. This information is housed at the Department Archaeology Office at the Northern Region Office in Santa Rosa and JDSF Headquarters in Fort Bragg. This data-base consists of archaeological site records, survey reports, and resource location base maps. These files are reviewed as part of the planning process for all projects on the Forest with potential for site disturbance. All archaeological reports and site records that are prepared for JDSF are submitted to the Northwest Information Center of the California Historical Resources Information System at Sonoma State University. The Information Center is consulted at five year intervals for any updated material that needs to be added to the JDSF data base.

A composite base map of all known heritage resource sites within JDSF is kept by the Forest Manager and the Department Northern Region – Coast Area Archaeologist in Santa Rosa. These base maps are periodically updated to reflect new information. Access to these confidential maps is on a strictly need-to-know basis, with site locations only being disclosed when protection measures must be implemented for a specified undertaking.

Comment 2: *If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.*

Response to Comment 2: Archaeological survey work is required and such work will always be documented with professional reports that are prepared in the manner described in: http://www.indiana.edu/%7Ee472/cdf/assistcdf/archrevprocedures.doc

Summary of Archaeological Survey Work Completed at JDSF

Cultural resource surveys within JDSF began over 29 years ago and represent an on-going and continuous effort at the Forest. During the past 29 years over 48 archaeological surveys have been conducted within JDSF. These include research by: Baxter 1993, Betts 1999, Douglas 1984, Farris 1980, Foster 1982a, 1983b, 1983c, 1983d, 1984a, 1984b, 1985a, 1985b, 1986, and 1988, Foster and Kauffman 1980, Foster and Woodward 1980, Gary 1988a, 1988b, 1989, 1990a, 1990b, 1990c, 1990d, 1991a, 1991b. 1993, 1994a, 1994b, 1994c, 1995a, 1995b, 1995c, 1995d, 1995e, 1995f, 1996a, 1996b, and 1996c, Gary and Hines 1993, Gerike and Jablonowski 1988, Hines 1991, Hylkema 1986 and 1989, Jenkins 1984, 1987a, 1987b, and 1989a, and Levulett and Bingham 1978. These surveys have led to the discovery of 49 recorded archaeological and historical sites and approximately 150 additional locations where minor historical features or artifacts have been documented. Two of the 49 sites have received test excavations (Layton 1990, Hylkema 1995), and several additional reports exist on JDSF history (Borden 1966, Connor 1976 and 1979, Connor and Johnson 1967, Holmes 1986, Jackson 1991, and Wurm 1986).

Most of these 48 surveys focused upon a small area - usually a timber sale unit. Although there has never been a complete survey of the forest, approximately 50% of the total acreage has been surveyed at least once for archaeological resources, mostly during review of individual project undertakings. CAL FIRE maintains a complete database for these archaeological investigations, and shares this information with the Northwest Information Center. The most comprehensive reports are those by Levulett and Bingham (1978), Gary and Hines (1993), and Betts (1999). These include specific listings of most of the 49 known recorded sites. These three studies have outlined the major prehistoric and historic periods of human occupation at JDSF and provided the framework necessary to interpret and evaluate specific sites.

Two of the sites have been investigated. These are Three Chop Village (Layton 1990) and Misery Whip Camp (Hylkema 1995). Three Chop Village is a site with remarkably intact housepits and abundant artifacts. It dates from circa 1000 BC to AD 1860 and contains historic artifacts salvaged by the Pomo Indians from a ship which wrecked in Caspar Cove in 1850. Misery Whip Camp, a small locality containing abundant historic artifacts, appears to be one of the earliest logging camps on the forest, which predates the railroad logging period. Archaeological work at this site recovered "penny pipes", evidence of on-site blacksmithing, and an association with early logging technology which utilized oxen yarding and "splash dam" transportation to the sawmill.

JDSF's prehistory is not well known since few excavations have been conducted in this part of interior Mendocino County. We do know that the area was occupied by the Northern Pomo and their ancestors in the Late Prehistoric Period (McLendon and Oswalt 1978:276), and some of the archaeological sites and artifacts are associated with utilization of JDSF by the Northern Pomo. Large, robust projectile points, milling stones and other evidence suggests the presence of earlier occupation, but the sites containing these materials have not been studied. The historic periods of utilization are much better known as there is a body of historical records to supplement the archaeological resources (see Borden 1966, Wurm 1986, and Jackson 1991). Most historical sites are associated with early logging activities. Resources types on the forest

include: village sites, housepits, lithic scatters, midden, and ceremonial locations, and remnants of historic railroad grades, trestles, and historic logging camps and artifacts.

Future Surveys

Since there has not been a complete archaeological survey of JDSF, surveys of specific projects are conducted prior to project commencement. Proposed timber harvesting operations are evaluated as per the requirements of the forest practice rules for identifying, protecting and recording resources. This includes an archaeological investigation containing prefield research, field survey, and documentation of findings. Projects other than THPs are reviewed as prescribed by the California Environmental Quality Act (CEQA) which also include an archaeological investigation and impact analysis.

The California Forest Practice Rules (14 CCR § 929.1(c)) require that an archaeological report, known as a Confidential Archaeological Addendum, be submitted for every timber harvesting plan. The existing rules specify report contents including site significance evaluations, site mitigation measures, site record forms, site location maps, and many other items. All said reports are confidential, are kept in a separate file, are not available for public disclosure, and are forwarded to the appropriate regional archaeological Information Center by Department staff within 60 days of project approval.

The Management Goals and Mitigation Measures for Heritage Resources (Chapter 9 of DEIR for the JDSF Management Plan) mandate that the procedures described in *Archaeological Review Procedures for CDF Projects* (Foster 2003) be implemented during the review of each project planned on the Forest. That document requires a Preliminary Study to determine if impacts to heritage resources are possible. This determination is made only after considering the full range of specific project activities and practices, the location of the project and other relevant factors; although in general any project that involves ground disturbing activities is considered to have the potential to affect heritage resources and, consequently, shall require an archaeological survey. If so determined, a heritage resource inventory will be required, including an archaeological records check, notification to Native Americans, prefield research, an intensive on-the-ground field survey, development of protection measures, recording of sites, and the completion of an archaeological survey report meeting current professional standards.

Comment 3: *Contact the Native American Heritage Commission for Sacred Lands File Checks and lists of appropriate Native American contacts.*

Response to Comment 3: The Native American Heritage Commission (NAHC) was contacted during the development of the draft Management Plan for JDSF and a Sacred Lands File check was completed by the NAHC at that time. In addition, the NAHC provided the Department with a list of local Native American Tribal Contacts and recommended we consult with those local tribal groups. That recommendation was carefully followed. Completion of those procedures resulted in the discovery of two additional Native American cultural sites on JDSF. One of these is a sacred waterfall, the other a traditional gathering area used by certain members of the local tribal groups. These are entered into our database and provisions for their management have been developed in consultation with local tribes. In addition to the consultation completed specific to the development of the draft Management Plan at JDSF, the Plan includes specific procedures for regular, on-going consultation as discussed below.

The California Forest Practice Rules (14 CCR § 929.1(a)(2)) require that Native American consultation occur during the preparation of each timber harvesting plan. This consultation consists of sending correspondence to all persons/groups included on a list assembled by Department in consultation with the NAHC. Initial Notification Letters are sent to all persons/groups listed within for the project county and to the NAHC for a check of the Sacred Lands Files. The same persons/groups and the NAHC also receive Second Notification Letters if and when the project is found to contain one or more native American cultural or archaeological sites (14 CCR § 929.1(b)). The Second Notification provides disclosure of the proposed site protection plan and provides Native Americans the opportunity to comment on same.

The Management Goals and Mitigation Measures for Heritage Resources (Chapter 9 of DEIR for the JDSF Management Plan) prescribe that the procedures included in *Archaeological Review Procedures for CDF Projects* (Foster 2003) be implemented during the review of each project planned on the Forest. In a manner similar to that described above under the Forest Practice Rules, the procedures document cited above specifies that written notification of a proposed project shall be sent to local Native American groups and individuals and to the Native American Heritage Commission (NAHC) using the most currently available version of the Department Native American Contact List (NACL). The Department maintains this List utilizing information and advice provided by the NAHC. The NACL, organized by counties or portions of counties, includes all local federally recognized tribal governments as well as other California Native American organizations and individuals that the Department places on the list based upon demonstrated knowledge concerning the location of heritage resources within California. The NAHC is included as a required contact for each county on the list to enable its staff to complete a check of the Sacred Lands File which is authorized by PRC §§ 5097.94(a) and 5097.95. The Department Archaeologist and/or project manager then follows up by investigating any potentially positive result revealed through this request for information. The list is posted on the Department Archaeology Program internet site to make it readily available to those needing the list. The Department updates the list at least twice annually to provide the most current information and each update reflects a new revision date, so users of the list may identify which version of the list they were using.

This written notification must include a request for information concerning the existence of any heritage resources within the project that may be known by the local Native Americans being notified along with other relevant information such as the estimated earliest date that the Department will approve the project; a statement that the Native American groups or individuals receiving the notice may participate in the environmental review process for the project; the address and phone number of the appropriate Department office to contact; a statement that a Confidential Archaeological Survey Report may be prepared for the project if a survey is conducted and a copy of pertinent information contained within it may, at the discretion of the Director, be obtained from the Department; a map or maps that display the ownership boundary with any specific treatment units, a map legend and a scale; the name of the USGS 7.5 quadrangle maps upon which the project is located as well as the legal description (Township, Range and Section) within which the project is located; and a statement that locations of sites disclosed will be kept confidential. Moreover, this notification to Native Americans is to be completed early in the process of developing a project to allow sufficient time for Native American groups and/or individuals to respond.

As well, if Native American archaeological or other heritage resources are identified within a project area, the Department project manager or Archaeologist must then send a written notice to the NAHC and the appropriate local tribal governments and individuals included on the

current NACL. This second notice must clearly state what was found, provide information regarding the proposed protection measures, and provide Native American groups and/or individuals the opportunity to submit comments and participate in consultation to resolves issues of concern prior to project approval.

Comment 4: *Lack of surface evidence of archaeological resources does not preclude their subsurface existence. Lead agencies should include in their mitigation plan provisions for identification and evaluation of accidentally discovered archaeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.*

Response to Comment 4: The mitigations included in this EIR do contain provisions addressing the procedures to be followed when archaeological sites are inadvertently discovered during timber operations. The specific procedures are found in the California Forest Practice Rules (14 CCR § 929.3). These procedures include provisions requiring ground-disturbing activities to cease within 100 feet of the discovery area, consultation with the Department, and amendment of the project report to include a site documentation and treatment plan. Copies of these amendment documents are forwarded for review to the Native American Heritage Commission and the appropriate local Native American tribal organizations and individuals specified on the Department's Native American Contact List. This written notification provides the NAHC and local Native Americans the opportunity to review and comment on the proposed treatment plan. Timber operations may not resume until the plan submitter proposes, and the Director agrees, to the protection measures being proposed. Monitoring of subsequent timber operations is sometimes required, depending upon the sensitivity of the area, and the types of timber operations being proposed. If the plan submitter proposes to stay out of the site area and not operate within the 100-foot zone surrounding the site, monitoring of timber operations is usually not required. Monitoring is often required, however, when timber operations are proposed within the 100-foot zone surrounding the site. This monitoring is often done by an RPF or Supervised Designee with archaeological training, or sometimes by a professional archaeologist on staff at CAL FIRE, depending on the sensitivity of the site and the nature of timber operations. Native Americans are notified in writing when treatment plan includes requirements for monitoring and have the opportunity to participate in these monitoring efforts if they express this request to the Department in a timely manner.

For non-THP projects, The Management Goals and Mitigation Measures for Heritage Resources (Chapter 9 of DEIR for the JDSF Management Plan) prescribe that the procedures included in *Archaeological Review Procedures for CDF Projects* shall be followed. Those procedures include direction regarding treatment of heritage resources discovered following project approval. As stipulated in that document, project activities within 100 feet of the newly discovered site shall be immediately halted; the appropriate Department Archaeologist shall be immediately notified; the Department Archaeologist shall ensure that the newly discovered site is recorded and its discovery and applicable protection measures are documented in the project files, following consultation about the discovery and appropriate treatment measures with local Native American tribal representatives and the NAHC. Resuming activities in the vicinity of the recently discovered site sometimes includes monitoring requirements, depending upon the sensitivity of the area, and the types of actions being proposed. If the entire area of the site and the 100-foot zone surrounding the site is protected by avoidance, monitoring is usually not required. Monitoring is often required, however, when actions are proposed within the 100-foot zone surrounding the site. This monitoring is often done by an RPF with archaeological training,

or sometimes by a professional archaeologist on staff at CAL FIRE, depending on the sensitivity of the site and the nature of the project activities. Native Americans are notified in writing when the treatment plan includes requirements for monitoring and have the opportunity to participate in these monitoring efforts if they express this request to the Department in a timely manner.

Comment 5: *Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.*

Response to Comment 5: The Management Goals and Mitigation Measures for Heritage Resources (Chapter 9 of DEIR for the JDSF Management Plan) as well as the Management Plan itself address this issue. As Management Goal 6 of the DEIR states, existing archaeological collections and archival materials shall be identified and cataloged, and to the extent practical, consolidated in a secure place accessible for research and interpretation. This same goal also specifies that a collecting policy for JDSF staff and contractors shall be established and a curation plan shall be implemented that includes accessioning future collected artifacts and pertinent records. In general, collecting of artifacts on the Forest is discouraged. The preferred treatment is to leave artifacts in place exactly where they are found. Sometimes, however, the Department believes that collecting important prehistoric or historic artifacts is the wisest management option to follow, and carries out these collections in accordance with the State's Guidelines for the Curation of Archaeological Collections (1993). Chapter 3 (page 80) of the 2002 Draft JDSF Management Plan acknowledges that collections of artifacts from the Forest are presently located at three separate institutions, making comparative studies difficult. It recommends that the Department establish a uniform collection policy in consultation with Department archaeological staff and a recommendation that a centralized collection facility be considered for the curation and display of artifacts collected from JDSF.

Local Native American tribal groups are not usually consulted about the disposition of historic artifacts or typical prehistoric artifacts discovered within this Forest. Local Native Americans, including those listed on the Most Likely Descendants List, will always be consulted, however, if artifacts subject to the Native American Graves and Repatriation Act or its equivalent in California State Law are discovered. Artifacts subject to these provisions include human remains, associated or unassociated funerary objects, sacred objects, or objects of cultural patrimony.

Comment 6: *Lead agencies should include provisions for the discovery of Native American human remains in their mitigation plan.*

Response to Comment 6: There are no provisions within the JDSF Management Plan or the DEIR regarding the discovery of human remains. Consequently, the provisions for the treatment of human remains specified in Section 7050.5 of the Health and Safety Code, Section 15064.5(e) of the CEQA Guidelines, and Section 5097.98 of the Public Resource Code would be fully implemented. These requirements are well-known by Department staff archaeologists who are routinely consulted during the very infrequent discovery of human remains within the heavily forested setting of JDSF.

Sincerely,

Stan L. Dixon
Chairman

Attachment

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COLLEGE OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL SCIENCE, POLICY & MANAGEMENT
DIVISION OF ECOSYSTEM SCIENCE
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July 13, 2007 **A-11**

Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

Subject: Jackson Demonstration State Forest Alternative G - Management with a Research-Driven Mission

Dear Members of the Board:

1 With regard to the adequacy of the recirculated DEIR in terms of identifying, analyzing and mitigating potentially significant environmental effects, we would like to offer a few points. The central theme is that the most significant environmental effects of the demonstration forest management plan will be measured by the applicability of the research and demonstration lessons to similar private forest lands in the whole North Coast region. As written Alternative G, should provide an impressive breadth of research and demonstration lessons. If offers an excellent opportunity for greater long term involvement with the cooperative extension mandates of the University of California. The greatest environmental risk to achieving the potential would involve reducing the range of activities.

2 The first point is the importance of ensuring a mosaic of forest structures and ensuring a diversity of forest management approaches so that the forest can achieve its mandate and potential as a world class research and demonstration state forest. Jackson Demonstration State Forest is unique on the North Coast region in terms of its size for doing research and demonstration at scales varying from individual stands to planning watersheds and other largest landscape-level units. The multitude of lessons from the long term Caspar Creek studies illustrate the value of conducting large scale experiments with a broad range of intensities. While a wide range of forest activities occur across the region on private lands, the demonstration state forest is the only place where long-term funded research and demonstration work can be combined with the activities. The inclusion of the Old Forest Structure Zone areas and areas representative of the full range of silvicultural treatments will be crucial to provide the opportunity to test out relevant approaches for forests from Del Norte to Santa Cruz. Further limits on the breadth of forest conditions or activities could seriously diminish the research and demonstration value of the forest.

3 In the past decade, around 100,000 acres of forest land in Mendocino County have changed ownership to non-profit organizations or state parks where ecological restoration from initial conditions dominated by low inventory stands is a dominant goal. Testing a range of

3 approaches, including reserves as well as some more aggressive and innovative approaches, on the state forest could provide valuable research results that will be of use to these efforts. The state forest has the opportunity to provide examples of a range of management approaches that can be tracked over decades to provide a 'compare and contrast' to the more limited management approaches that will probably be chosen by each separate entity.

4 More importantly, there are tens of thousands of family forests or partnerships on the North Coast that would benefit from being able to see and learn from the full range of well documented forest management operations and strategies. Given that current private landowners and their heirs will have a different mixes of ecological, aesthetic, and economic goals it is critical for the demonstration mandate that the forest be able to undertake and document the full range of approaches.

5 To accomplish the demonstration goals, it will be crucial to involve consulting foresters and extension foresters in the strategic planning for relevant timber harvest and other forest management operations so that the lessons from the full range of approaches can be provided to prospective land owners. The demonstration areas on the west and east end of the forest, as well as potential advisory groups that work with the forest manager, offer excellent opportunities to increase the relevance of the state forest to the full range of representative groups. Even though JDSF is fully within Mendocino County, its regionwide and statewide mandate requires that it involve representative from Humboldt and other counties with large forest acreages.

6 Finally, while the overriding theme is management with a research-driven mission, the forest management plan need not be overly prescriptive at this stage on what can and what can not be specific research projects. At the University's Blodgett Forest Research Station, the forest management plan is a predictable backdrop of forest stand types (now and over the next few decades) onto which research projects can be applied. Forest management does not drive the design of the forest plan, the forest plan allows for the long term research studies needed to understand vegetative dynamics, stream and water balance dynamics, wildlife populations and habitat dynamics, and a host of other issues. The key is a wide array of vegetation in patterns that allow for a high quality research in this decade and in future decades. Alternative G as written provides that breadth and stability. Further restrictions could seriously impede the long term value of research and demonstrations.

Sincerely,

/s/
William Stewart
Cooperative Extension Forestry Specialist
stewart@nature.berkeley.edu

/s/
Yana Valachovic
Forest Advisor
University of California Cooperative Extension
Humboldt and Del Norte Counties

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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December 21, 2007

William Stewart, Cooperative Extension Forestry Specialist
Yana Valachovic, Forest Advisor, UC Cooperative Extension
Dept. of Environmental Science, Policy & Management
137 Mulford Hall, MC3114
Berkeley, CA 94720-3114

RE: Responses to Comments on the Recirculated Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan Alternative G

Dear Mr. Stewart and Ms. Valachovic:

The Board of Forestry and Fire Protection offers its thanks to you for your July 13, 2007 letter regarding the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in your letter, a copy of which is attached.

Response to Comment 1
The Board generally agrees with this statement, although the environmental benefit realized on private lands, resulting from application of demonstration and research results derived at JDSF, cannot be predicted and is therefore speculative at this time.

Response to Comment 2
The Board agrees with this statement. The management plan is expected to produce a mosaic of stand conditions and both research and demonstration on a broad range of forest management practices. The administrative draft final forest management plan preserves managment options in the long term, following the interim period.

Response to Comment 3
Comments noted. The state forest is expected to contribute valuable information in this regard.

Response to Comment 4
The Board agrees with this statement. The state forest will produce valuable research and demonstration on a broad range of management activities and approaches.

Response to Comment 5
Comments noted. The Board and Department are open to management advice from a broad range of perspectives, areas of expertise, and geographic areas, including advice from management experts within other timbered counties of the region. The JDSF advisory committee is expected to include membership from a local, regional, and state-wide perspective.

Response to Comment 6
The Board agrees with this statement, and has attempted not to overly restrict future management options.

Sincerely,

Stan L. Dixon
Chair

GM-29

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July 16, 2007

Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

Subject: Jackson Demonstration State Forest

Dear Members of the Board:

With regard to the Recirculated DEIR for Jackson State Demonstration Forests, I would like to make the following comments:

1

- Research and demonstration forests maximize their effectiveness when they include a diversity of stands in an array of ages, vertical structures and species compositions. This facilitates a variety of current research projects and provides the greatest opportunity to facilate future research. Future research needs cannot be foreseen, but can be anticipated through a diversity of stand structures at all times.
- To provide this diversity of stand structures, a full range of silvicultural treatments are necessary. This includes the full range of regeneration methods as well as intermediate operations such as thinning and pruning, and different types of regeneration. Each of these operations may have a unique effect on resulting stand development and the resultant stand structure.
- Even-aged management systems are a critical component of this diversity of stand structures. Not only are they an important management alternative for the industrial and non-industrial "clients" of Jackson Demonstration State Forest, they also provide a unique structure that allows for analyzing the effects of time since disturbance on the developing stand structure.
- These stand structures should be distributed over the landscape to provide opportunities to assess broad-scale effects of forest management, to address variations in site quality over the forest, and allow studies of broad-scale issues such as wildlife.

2

- The input of members of the local community and the scientific community are important aspects of management planning on an experimental forest. However, I hope with Jackson Demonstration State Forest these efforts can be streamlined and limited to large-scale planning issues rather than at the individual project level.

3

- Finally, Jackson Demonstration State Forest should be given a mandate to live up to its enormous potential as a world-class forest research facility. Its contribution to the forest science community should go beyond the important role of being the center for research on coast redwoods. Additionally, Jackson has the potential to expand its international reputation as a center for hydrologic studies to be a comparison study site for other research forests in the Pacific Northwest.

2

4 I believe Alternative G – Management with a Research-Driven Mission" best meets these goals. This alternative is best-suited to include active forest management and a diversity of management treatments and stand structures. It will provide for Jackson Demonstration State Forest personnel to have the flexibility to facilitate a wide range of research and demonstration projects. It can provide the stability in both personnel and management direction so that long-term research is encouraged and attracted to JDSF. Finally, it can provide the mandate for Jackson Demonstration State Forest to live up to its enormous potential as a world-class forest research facility.

Sincerely yours,

Kevin L. O'Hara
Professor of Silviculture
ohara@nature.berkeley.edu

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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December 21, 2007

Kevin O'Hara, Professor of Silviculture
Dept. of Environmental Science, Policy & Management
137 Mulford Hall, MC3114
Berkeley, CA 94720-3114

RE: Responses to Comments on the Recirculated Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan Alternative G

Dear Mr. O'Hara:

The Board of Forestry and Fire Protection offers its thanks to you for your July 16, 2007 letter regarding the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter GM-29, a copy of which is attached.

Response to Comment 1
The intent of the management plan is to provide a range of conditions across the landscape within the framework of meeting the general goals for management. The Board has included a mix of silvicultural prescriptions in the plan to provide the outdoor laboratory for researchers, as you suggest, and to include conditions to represent our wide array of clients. The incorporation of two targeted demonstration areas is one example of our plan to provide for research and demonstration across the landscape. The spatial configuration of special management areas so that an array of forest structures might be present in different microclimates was intentionally done to address this issue.

Response to Comment 2
The Board notes your concern that individual projects not be the purview of advisory bodies. That is not the intent of the Board.

Response to Comment 3
The Board agrees that there is great opportunity to increase the research capacity and impact of JDSF. As an example to the point you raise about hydrologic studies, the Caspar Creek project was recently selected as a site in the International Cooperative Program, a project of the United Nations Economic Commission for Europe. The

announcement may be found at the following location:
http://www.fs.fed.us/psw/news/070816eft_caspar.pdf.

Response to Comment 4
Your support for alternative G is noted.

Sincerely,

Stan L. Dixon
Chairman

Attachment

GM-31

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Incorporated August 5, 1889
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JUL 16 2007
BOARD OF FORESTRY
AND FIRE PROTECTION

July 9, 2007

Mr. George Gentry, Executive Officer
State Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

RE: Comments on Recirculated Draft Environmental Impact Report (RDEIR) and Alternative "G", Management Plan for Jackson Demonstration State Forest (JDSF)

Dear Mr. Gentry:

Certification of the RDEIR

1 The Council recommends that the Board of Forestry (BOF) certify the RDEIR and proceed to a final decision on a management plan. The RDEIR is an extensive review of environmental impacts, alternatives and feasible mitigation measures.

Recommendation: The BOF may consider adopting additional finding(s) in support of the certification based on Council support of a research-driven management plan. Later in this letter, we will add some details about the planned "Noyo Center for Science and Education", to be located in Fort Bragg as a part of the redevelopment of the mill site in the west portion of our city.

Background

2 The City of Fort Bragg is the most interested of any other city because of its proximity to JDSF. The headquarters are located in the City, and the forest has a considerable acreage in the Noyo River, one source of domestic water for the City. Fort Bragg has been adversely affected by the virtual shutdown of management on JDSF in 2003. Jobs related to forest management, research and timber production have been reduced. Tax revenues have fallen to many local entities as a result. Amenities such as access for recreation and fire wood supplies for local citizens have been reduced. Our continuing interest to re-establishment of a management program is indicated by the attached, **Resolution 2923-2006, dated February 13, 2006, and a Letter of Clarification to that Resolution, dated May 22, 2006.**

3

State Board of Forestry
July 9. 2007
Page 2 of 3

Goals of the Fort Bragg City Council

4 The Council does not have the technical expertise to recommend specific practices for JDSF. Rather, we rely on past communication on the matter of management of JDSF and a review of the RDEIR and Alternative "G". Following is a summary of the goals we wish to see in those documents: **"Our citizens support a management approach on**
5 **JDSF that balances research, recreation, restoration, habitat enrichment, and the leadership needed to sustain a healthy forest products infrastructure. "** (Extract from Letter of Clarification, Dated May 22, 2006.) **"The Fort Bragg City Council also wishes to communicate its strong recommendation that an emphasis is placed on the sustainable harvest of mature high quality Redwood in the 80-120 year range, making sure that as measured per decade, the forest-wide inventory of Redwood**
6 **stands 80-120 years old be gradually increased until the point is reached when a substantial continuous yield of that mature timber can be regularly harvested."** (Extract from Fort Bragg City Council Resolution 2923-2006, Dated February 13, 2006.)

Council Analysis of Alternative "G"

Using the above criteria and a desire for balance of goals, following is our analysis of Alternative "G":

1. **Research** includes Goal 1, Goal 6, Demonstration and Education Activities and the Advisory Committee(s). We recommend that the BOF direct that advisory
7 committee(s) be limited to a workable number of persons and that direction is provided for specific tasks, and, that there is understanding of a specific responsibility to carry out the policy set by the BOF.

2. **Recreation** includes Goal 5 and the buffer concept for roads and trails. Supporting recreation are the Demonstration and Education Activities.

8

3. **Restoration** includes Goal 2, Goal 4, long term forest structure goals, control of competing vegetation and large tree management.

4. **Habitat Enrichment** includes Goal 3, Goal 4, the "Older Forest Structure Zone" of 6,803 acres and the designation of 1,459 acres of late seral forest habitat.

5. **Forest Products Infrastructure** includes emphasis on harvest and continual yield of
9 large, high quality timber, Goal 4, Goal 8, a limit on even-age management and a 20 Million Board Feet (MMBF) minimum annual harvest.

Emphasis on Research

10 Although research in forestry matters has been practiced at JDSF for many decades, the BOF has given direction for an emphasis on research. The Council supports this

State Board of Forestry
July 9. 2007
Page 3 of 3

10 direction. If there is a difference to prior direction from the BOF, this is the most important.

11 The City wishes to inform the BOF that as a part of the redevelopment of the mill site in the west part of Fort Bragg, we have been working on a concept to establish the "Noyo Center for Science and Education at Fort Bragg". So far, we have a detailed plan in preparation for the establishment of a non-profit educational foundation, along with some alternatives for financing toward funding a set of buildings and programs for a marine program. While waiting for action on the JDSF management plan, we have held up any invitation for including JDSF activities. At this time, we wish to invite the BOF and JDSF to open discussions about a collaborative way to make a better institution that will benefit your programs and the City. The site we have in mind is near Soldier Point, just north of the mouth of the Noyo River.

As we see the project at this time, the "Noyo Center for Science and Education at Fort Bragg" might provide the mutual benefits for a destination for visitors and school groups interested in north coast natural science. Displays related to land and marine science could explain the complex natural relationships that occur in nature, including human needs, uses and effects. The Center can be a beginning point for field tours, and it can be a point for collaborating scientists and technicians. We urge a positive inquiry.

Summary

12 1. The RDEIR should be certified.
13 2. Alternative "G" seems to meet the criteria considered by the Council to evaluate any JDSF management plan. We do not object to some technical adjustments by the BOF after consideration of comments, provided that balance is retained.
14 3. The planned "Noyo Center for Science and Education at Fort Bragg" has the potential to benefit the Demonstration and Education Activities described in Alternative "G" and become a way for the City to diversify its prestige and economic base.

Sincerely,

Doug Hammerstrom
Mayor

Dave Turner
Vice Mayor

Dan Gjerde
Councilmember

Jere Melo
Councilmember

Attachments: Resolution 2923-2006 and Letter of Clarification, dated May 22, 2006

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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December 21, 2007

Doug Hammerstrom, Mayor
Dave Turner, Vice Chairman
Dan Gjerde, Councilman
Jere Melo, Councilman

Dear Fort Bragg City Council:

Thank you for you letter of comment on the Recirculated Draft Environmental Impact Report for the Jackson Demonstration State Forest Management Plan Alternative G (RDEIR). Our responses to your letter are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter GM-31, a copy of which is attached.

Comment 1
The Board proposed to certify this Final EIR (FEIR), which incorporates the referenced RDEIR. The Board is considering for approval an Administrative Draft Final Forest Management Plan that incorporates a research-driven focus.

Comment 2
The economic importance of JDSF management to Ft. Bragg and Mendocino County is addressed in the DEIR (see, in particular, sections III.5 and III.6) and RDEIR. The Board anticipates that amenities such as access for recreation and availability of firewood for sale will be increased when JDSF returns to active management.

Comment 3
See separate responses to Agency Comment A-7 and A-7a (Resolution 2923-2006 and letter of May 22, 2006) under the 2005 DEIR response to comments section of this FEIR.

Comment 4
Comment noted.

Comment 5
The Board believes that the Administrative Draft Final Forest Management Plan, based on Alternative G, provides an appropriate balance of these factors.

Comment 6
The management of JDSF proposed in the Administrative Draft Final Forest Management Plan will provide for the harvest of mature high quality timber, as described. Implementation of the proposed Plan is anticipated to result in increasing availability of such timber over time.

Comment 7
The Administrative Draft Final Forest Management Plan provides partial direction for the establishment of a new JDSF advisory body. The Board will be working with the Department on the completion of the process for its establishment. The Board recognizes the importance of the group being of a workable size, having clear direction for their work, and understanding their role in implementing the Board policy established in the management plan for JDSF.

Comment 8
Comments noted.

Comment 9
The RDEIR estimates that implementation of Alternative G, as presented there, would result in an annual average harvest of 20-25 million board feet (MMBF) per year during the first 10 years of implementation. This range is not intended to provide a minimum harvest level, but rather an estimate of the anticipated harvest level. The proposed Administrative Draft Final Management Plan establishes that, given the various management constraints and goals of the Plan, the annual harvest is expected to be in the range of 20-25 MMBF per year and may not exceed 35 MMBF.

Comment 10
The Administrative Draft Final Management Plan, which is based on Alternative G, places a primary emphasis on research and demonstration at JDSF.

Comment 11
The Board is very interested in the City's plans for the redevelopment of the former Georgia-Pacific mill site and welcomes the invitation to discuss potential involvement of the Board and Department in the proposed "Noyo Center for Science and Education."

Comment 12
The Board is proposing to take action to certify this FEIR.

Comment 13
The Administrative Draft Final Forest Management Plan being considered by the Board is based on Alternative G.

Comment 14
The Board concurs.

Sincerely,

Stan L. Dixon

Chairman

Attachments

cc: Members of Fort Bragg City Council

Jul 16 2007 1:15PM CENTER FOR FORESTRY 5106433490 p.1

GM-34

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16 July 2007

Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460
FAX 916 653-0989

Dear Members of the Board:

The University of California - Berkeley has had a long and fruitful history with the state forest system in California. One of our former faculty, Professor Emanuel Fritz, was the leading proponent of establishing the state forest system including the acquisition of Jackson Demonstration State
1 Forest. Since then, many University of California faculty and students have participated in research projects, fieldtrips, served on advisory committees, and provided tours of ongoing research at Jackson Demonstration State Forest. The University of California, College of Natural Resources
2 encourages the Board of Forestry to select an alternative for management of Jackson Demonstration State Forest that continues this long history of cooperation and partnership. To provide the greatest
3 opportunity for future research, management should emphasize a variety of management approaches that result in a diversity of stand structures. Experience with research forests has
4 traditionally shown that a diversity of stand structures serves to facilitate the greatest opportunity for current and future research. This will provide opportunities for continued collaboration between the California Department of Forestry and the University of California, and serve to meet the
5 critical research and demonstration mission of the state forests.

Sincerely,

Greg Biging

Greg S. Biging
Associate Dean for Forestry and Extension

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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SACRAMENTO, CA 94244-2460
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Dr. Greg Biging
Associate Dean for Forestry and Extension
160/162 Mulford Hall, MC3114
Berkeley, CA 94720-3114

RE: Responses to Comments on the Recirculated Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan Alternative G

Dear Mr. Biging:

The Board of Forestry and Fire Protection offers its thanks to you for your July 16, 2007 letter regarding the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter GM-34, a copy of which is attached.

Response to Comment 1
Comment noted. JDSF has been a teaching and research destination for the University of California for many years.

Response to Comment 2
Comment noted.

Response to Comments 3 and 4
Tables 1 and 2 in the Management Plan show the desired future forest structure conditions and the silvicultural methods planned for how to get there. Nobody can predict the full range of future research demands and societal priorities. Consequently, tables 1 and 2 reflect a strategy of keeping as many options open as possible, maintaining and creating the widest possible range of forest conditions that will result in maximal utility for future research and forest structural diversity.

Response to Comment 5
The Board agrees there is a critical growing need for research into sustainable forestry in managed forests, in order to help responsibly manage natural resources for a constantly growing population and associated demand pressures on natural resources in the State.

Sincerely,

Stan L. Dixon
Chairman

Attachment

College of
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GM-35

July 12, 2007

Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

RE: Comments on the recirculated draft EIR (RDEIR) and "Alternative G" for the Jackson Demonstration State Forest Management Plan, June 1, 2007

Dear Members of the Board:

I write as an open space planner and academic who specializes in citizen involvement in planning and design processes, and as a member of the Demonstration State Forest Advisory Group. As such I would like to address several of the specific changes proposed in the RDEIR
1 for Jackson Demonstration State Forest (Jackson), namely that an advisory group be established to advise the Department and the Board concerning the long-term management of the Forest. I believe this is an important and timely decision and could be beneficial to the forest, to the public, to departmental staff, and policymakers if the group is carefully constructed to represent the broad public interests in the forest and its purview is specifically targeted to avoid micromanagement.

In the 1980s and 1990s I was a contractor to the Department and conducted four recreation
2 studies on the State Forests (Jackson, Mountain Home, Boggs, and Soquel), prepared three recreation plans including one for Jackson, and worked with the Forest Manager at Soquel Demonstration State Forest (Soquel) to advise him on the composition and protocols for the forest's advisory committee when it was first established.

At Soquel the advisory committee has provided invaluable direction in terms of the demonstration and education value of the forest and certainly has represented the complexity of
3 the forest's constituency in planning and management. The group has also played an important outreach role. While it is possible for the same situation to occur on Jackson, there is a lot of work to be done to ensure a positive outcome. Primary is identifying Jackson's public so as to define seats on an advisory committee that represent all interests. I would argue that the data in
4 this regard is woefully out-of-date. For example the recreation surveys and community planning meetings that identified forest user groups were done in the late 1980s. At that time the mill in Fort Bragg was still in operation, the primary users were campers, firewood cutters, equestrians,

4 and off-road vehiclers. The interaction between recreation, demonstration, and education was minimal. Nationally, knowledge concerning sustainable forestry, the risks to the forest due to sprawl and land fragmentation, and the role of the public in forest conservation was young. Given the significant changes in Jackson's local community demographic and the nature of forest recreation in the last 20 years, advancement in forest research of all kinds, and the redefined goals for Jackson stated in this management plan (namely the primacy of demonstration) it is imperative that the data be updated to inform the composition and charge of any advisory committee.

5 That said, I would also argue that a "representative" committee is not the same as "stakeholder" committee. Stakeholder is far too narrow, and at this point in Jackson's drawn-out and litigious planning process is comprised of those who have a stake in a certain outcome of *the plan*. The long-term constituency for the forest is much broader. I urge the Department and Board to ~~take~~ appoint a representative committee

6 Jackson Demonstration State Forest is the flagship forest in California's system. It should embody the State's most advanced thinking and represent the broadest public interest. This will not be easy in the short term given the Jackson management plan process. A considerable amount of work will need to go into establishing trust within any convened advisory group and between an advisory group and Jackson's staff. A carefully designed process will be needed to get a committee started, the ground rules of operation established, and so on. This requires patience, and quite frankly I fear that the Department and Board will be pressured to jump the gun before it is ready to appoint a "charter" advisory committee that is representative. I urge you to approach this important task with a steady hand.

Respectfully submitted,

Marcia J. McNally
Associate Adjunct Professor

STATE OF CALIFORNIA THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER. *Governor*

BOARD OF FORESTRY AND FIRE PROTECTION

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Berkeley, CA 94720-2000

RE: Responses to Comments on the Recirculated Draft Environmental Impact Report for the Jackson Demonstration State Forest Draft Management Plan Alternative G

Dear Ms. McNally:

The Board of Forestry and Fire Protection offers its thanks to you for your July 12, 2007 letter regarding the Draft Environmental Impact Report (DEIR) for the Draft Jackson Demonstration State Forest (JDSF) Management Plan. Our responses are provided below. Note that the response numbers correspond with the comment numbers as assigned in Exhibit Letter GM-35, a copy of which is attached.

Comment 1
The existence and composition of an advisory group is not per se related to the potential for environmental impact from management of JDSF. However, the Board concurs that the establishment of an advisory group for JDSF management is an important step to take. The Board's proposed Administrative Draft Final Forest Management Plan provides direction for the establishment of an advisory body for JFSF. The Board and Department are committed to establishing an advisory group and will be taking steps to do so following the certification of the FEIR and approval of a new management plan for JDSF.

Comment 2
Comment noted.

Comment 3
The Board concurs that the advisory committee for Soquel Demonstration State Forest, which is required per Public Resources Code § 4662, has played an important role in guiding the management of that forest.

Comment 4

The Board and Department recognize the importance of the composition of the interests represented on an advisory body for JDSF. The Board and Department will be working carefully to determine the appropriate composition of and charter for this body. The Administrative Draft Final Forest Management Plan based on Alternative G calls for a recreation users survey to better understand the interests and needs of those who recreate on JDSF.

Comment 5

The Board agrees that the JDSF advisory group should have a broad, representative composition. Direction provided in the Board's proposed Administrative Draft Final Forest Management Plan for JDSF indicates such a composition.

Comment 6

The Board recognizes the substantial challenges to establishing, chartering, and convening a successful advisory group for JDSF and will work closely with the Department to exercise the high level of diligence necessary to that end.

Sincerely,

Stan L. Dixon
Chairman

Attachment