Section IV

Individual Letters and Responses

This section presents responses to individual public comment letters. Responses immediately follow each letter and are organized in the same order as the comments in each letter. Several of the letters included attachments. Attachments were not included herein if our response did not directly reference the attachment.

PS-2

Dear Mr. Rowney –

I have been very concerned about Jackson State Forest, and have written to CDF with these concerns.

Please prepare a Management Plan that
1 manages all of the forest for sustainable yield
2 and for recovery of native plants and animals.
3, 4 Protect all old-growth and second growth trees
5 and increase streamside buffers.

I mountain bike in Jackson and am appalled at the clearcutting

Thank you. Peggy da Silva

Letter PS-2

Response to Comment 2.1
Please refer to General Response 1. The DFMP provides for a sustained yield harvest level between 31-33 MMBF annually through the life of the plan that is below the modeled estimate of 39 MMBF annual growth from the Option "A" described on page 48 of the Plan. No changes to the DEIR or DFMP are required.

Response to Comment 2.2
Special Concern Areas involving unique habitats for native plants and animals on JDSF are recognized in the Plan and described on pages 7-8 and in greater detail on pages 141-142. These areas involve limited silviculture or no harvesting to protect identified sensitive resources. These areas will provide suitable protection and possible recovery for native plants and animals. An alternative that would provide for the recovery of sensitive species was considered, but not in detail, in the DEIR.

Response to Comment 2.3
Please refer to General Response 4. Retention of old-growth stands and individual old-growth trees is provided for in the Plan as described on pages 59 and 60. Protection of old-growth trees is a goal except where public safety is an issue, or retention would result in the potential for greater long-term environmental damage, including but not limited to issues related to road and landing siting, soil instability, damage to aquatic resources, or cable yarding requirements.

Response to Comment 2.4
Please refer to General Response 1. Also, the protection of all second growth trees was considered in Alternative “A.”

Response to Comment 2.5
Adequate streamside buffer widths are provided as described on page 70 partially based on the BOF July 2000 Threatened and Impaired Watersheds rule package. Additional increase of streamside buffers is unwarranted.

MD-12

June 7, 2002

To Andrea Tuttle,

This letter is to voice my dismay at the destructive logging that the CDF has been doing at Jackson Forest. I request that my comments be incorporated into the public comment record.

1, 2, 3 Only practices should be demonstrated that would provide for the greatest protection of habitat for birds, fish, animals and plants. Focus should be on restoring the eco-system,
4 not destroying it.
5 Clearcutting should not be used.
6 Repair of roads for trail use should be undertaken.
7 Increase the number of campsites and link them together with the trails, while maintaining the beauty and rustic character of the setting.

Please lets keep our forests for generations to come.

Thank you,

Mary Jo Dorr

Letter MD-12

Response to Comment 12.1, 12.2, 12.3, and 12.4
Please refer to Response PS-2.2.

Response to Comment 12.5
Please refer to General Responses 1 and 8.

Response to Comment 12.6
Please refer to Response MW-45.4

Response to Comment 12.7
Specific increases in the number of campsites are beyond the scope of this Program EIR. Please refer to the Recreation Section of the DEIR for general analysis of the DFMP proposed management of recreation areas.

EP-14

PO Box 2256
San Anselmo
CA 94979
06-04-02

Christopher P. Rowney
Demonstration State
Forest Program Manager
CDF
PO Box 944246
Sacramento, CA 94244-2460

RECEIVED
JUN 10 2002

Dear Mr. Rowney,
Re Jackson Forest

I have been in many forests in all but two of the fifty states, but I have never seen such a unique, impressive forest as the Jackson. It is truly awesome such tall thin trees living these steep ridges and slopes - with the canopy stopping most undergrowth but ferns.

We are truly lucky to have this forest - and it deserves protection. These second growth trees must be almost 100 years old 1 and they deserve a high degree of protection.

I do also believe we should set a plan except all old growth trees from logging. Besides we have no real need to log them - ~~these~~ the % they contribute must be very, very small

So I hope you develop a plan
3 that leans heavily towards preservation.
- Besides sending wood overseas where
much of our lumber is destined is
a travesty.

This forest is special. I only
saw it for the first time last
week on a visit to the town of
Mendocino - and I can't come up
with any more words to express how
wonderful and priceless this forest is

Thanks

Ed Rosen

Letter EP-14

Response to Comment 14.1
The DFMP provides for areas of late seral characteristics development and is analyzed in the Biological Resource Section of the DEIR. Please refer to General Response 1 and Response 247.

Response to Comment 14.2
Please refer to Response PS-2.3.

Response to Comment 14.3
Please refer to General Response 1.

NG-16

18731 Trillium Lane
Fort Bragg, CA
95437-9286

Terry & Nannette
Giomi

Phone: 707.964.4435
Fax: 707.964.3609
Emails: tjgiomi@aol.com
ngiomi@aol.com

June 10, 2002

RECEIVED
JUN 14 2002

Dear Mr. Downey,

My husband and I are the property owners of 18731 Trillium Lane Fort Bragg, CA. as of September 2000. Your records show the previous owner, Sandra Schnaubelt. Please update your information so that we will receive timely notices as our property abuts Jackson State Forest -

Sincerely,

Nannette Giomi

Letter NG-16

Response to Comment 16.1
Commenter is adjacent landowner who would like to be listed, presumably in JDSF records, in order to receive timely notices regarding actions on the forest. Comment does not address significant environmental effects of the project.

PL-17

11 JUNE

JUN 1 4 2002

CDF

IN RE: DFMP

SIRS,-

A "MIXED-USE" MODEL IS MOST APPROPRIATE, BUT
1 RECREATIONAL USES SHOULD BE A PRIMARY USE.
THE HARVESTING SHOULD BE ON A SUSTAINED
2 YIELD BASIS AIMING FOR 100 MBF/A OF
INVENTORY. THE INDUSTRIAL MODEL IS
3 INAPPROPRIATE FOR A State FOREST

THE PRACTICE OF ACCEPTING THE LOW BID
4 (I ASSUME REQUIRED BY LAW) NEEDS TO BE CHANGED;
OR ENFORCEMENT OF "BEST" PRACTICES MUST
5 BE AGGRESSIVELY ~~EAF~~ IMPLEMENTED

WHAT SHOULD BE "DEMONSTRATED" IS THE
ABILITY TO USE OUR RENEWABLE RESOURSES IN
6 A MANNER CONSISTENT W/THE HIGHEST ETHIC
+ PRINCIPLES OF STEWARDSHIP.

PERHAPS A SECTION COULD BE DEDICATED
TO EDUCATIONS: EXTREMISTS (J. PHILBRICK +
7 V. TAYLOR, e.g.) COULD BE PUT ON DISPLAY
W/PROJECTED SCENARIOS.

Thanks

Peter D. Lit

Peter Lit
30995 GREENWOOD Rd
ELK, CA 95432

Letter PL-17

Response to Comment 17.1
Please refer to General Responses 1 and 2.

Response to Comments 17.2 and 17.3
Please refer to Response PS-2.1.

Response to Comments 17.4-17.7
Please refer to General Responses 1 and 2.

WS-26

Post-it® Fax Note 7671	Date 9/6 # of pages ▶ 2
To Aimee Weber	From Jim Hawkins
Co./Dept. SHN	Co. NRM
Phone #	Phone #
Fax #	Fax #

William F. Smith
275 Mendocino Pl.
Ukiah, Calif. 95482
Ph. 707 462 3385

Dear Sir:

Jackson Demonstration State Forest has been and should remain along with private non-industrial and industrial timberlands important to this county and to our state's economy, environment, and cultural vitality. It deserves the best stewardship possible based on real science, sound theory, comprehensive field studies and analysis. We have come a long way from the days when it was the ethic of the time to cut and burn and abandon our forest lands and then continue with efforts to convert them to pasture. Much of the progress has been based on scientific field trials conducted on our state forests. Forest management is an evolving science and should continue on J.D.S.F. At the same time J.D.S.F. has been a steady supplier if raw material for the local forest products industry creating jobs and supporting supply industry.

J.D.S.F. has produced volumes of studies and data that can help make proper decisions to produce more fiber volume per acre with less negative impact on the forest and its plants and animals.

California currently is importing most of its forest products from out of state, about 80%. This has been called environmental imperialism where we muck around in some other back yard for our needs. The reasons are several. Regulations and an anti industry posture in Sacramento ha chased capital to other states and countries. Much of the public perception of the harvesting process is negative and based on fragmentary or false information. Those who are still struggling to compete are doing penance for what was the ethic of the time when there was not the recognition of the forest values that we have now. When I first was involved in the harvesting process in this county I couldn't sell redwood second growth for the cost of logging and hauling. So why, at this time, would forest land owners be motivated to commit to long term tree growing. Surprisingly many in this area did commit led by professor Emmanuel Fritz of U.C. Berkely forestry school .

Now we have 700,000 people a year moving into California. They need wood products from a renewable resource. As a private forest landowner I would like to furnish some of this wood. I need information from J.D.S.F. to show me how to do a better job of providing this wood within the regulatory framework while still protecting the multitude of forest values.

As a 45 year member of the Society of American Forester I have been involved for several years in an annual Forest Conservation Days program at a county park in Santa Clara County. We guide groups of 4th and 5th graders on a walk through a 130 year old mixed Redwood -Douglas fir forest explaining how the forest grows and reproduces and telling them about the products and other facets of the forest. This year at the start of the walk I asked the question "should we cut trees" The answer I got was a resounding NO. Like most of our urban population they don't connect the everyday things they use and live with the processes involved in producing them. They need to be enlightened.

This last weekend I took a walk through an area in which I was involved in logging over the period 1975 through 1985. It showed me we had done some things right but there were indications of some mistakes where we could have done better. J.D.S.F. we need you to help the commercial forest owner to do better. The alternative is the selling off and break up of these producing timberlands into hillside retreats. The end result will be the total demise of the forest products industry, tax losses, and the exacerbation of already sorry social problems. My children though they all worked for forest products firms locally, have all left the county for better employment elsewhere. A viable long-term forest industry will keep some of those graduating from our schools here where they can earn a decent living while avoiding the 2 to 3 hour commute.

1 J.D.S.F. should maintain at least the annual cut that they have scheduled in the past if not more as the forest is capable of growing far more. A realistic cut can produce a sustainable forest plus build a substantial additional inventory.

More of the receipts from forest sales needs to be plowed back into the administration of the forest to:

2 1. Expand the field studies and the analysis of the studies.

3 2. Increase the dissemination of the information developed from these activities. I have been on their

mailing list but have received nothing for some time

4,5 3. Start a program of forest conservation field trips for teachers, lawmakers, students, and any part of the public that needs enlightenment about forest management, harvesting, and growth. This should be a large-scale endeavor as our population grows towards 50 million.

6 4. And last factor in the social ramifications as well as the environmental when making decision. Zero risk to the environment is not possible in a state with 34 million people short of doing away with all of us.

William F Smith
RPF 557 retired

Letter WS-26

Response to Comment 26.1
The DFMP proposes a harvest level that is somewhat higher than historic average harvest levels. The review of the DFMP proposed harvest level in the DEIR indicated that a sustainable harvest level is proposed.

Response to Comment 26.2 and 26.3
Budget issues are beyond the scope of the EIR.

Response to Comment 26.4 and 26.5
This type of activity is addressed in the DFMP, but is beyond the scope of the EIR.

Response to Comment 26.6
Commenter states that zero risk to the environment is not possible without "***doing away with all of us.***" The CEQA environmental review does not necessarily guarantee the elimination of risk; rather it is intended to minimize or mitigate those environmental effects determined through analysis to be significant. No significant unmitigable effects are expected to result from JDSF management under the DFMP.

Social conditions were considered during the development of the DFMP. The DEIR focuses on the environmental impacts of the DFMP as required by CEQA. Social effects are not considered environmental effects under CEQA.

NB-33

June 3, 2002

To: Mr. Christopher P. Rowney, Demonstration State Forest Manager
CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

Re: Jackson Demonstration State Forest Management Plan and EIR

Dear Mr. Rowney,

As a concerned individual and a neighbor of Jackson Demonstration State Forest, my major interest in the future of JDSF is in recreation, however after reading the Forestry plan I
1 endorse the forest management recommendations of CAC members Lin Barrett, Greg Guisti, Henry Gundling, Art Harwood, and Monroe Robinson.

I also support a permanent local CAC with representation from the community including
2 forestry, recreation, local government, environmentalist and concerned public interests to work with CDF staff, and I encourage JDSF to seek third party certification of management
3 as "sustainable" which would increase the value of JDSF timber.

4 After reading Goal #5 of the EIR, I support policies 5-1 to 5-6 addressing "Recreation". Objective 5-5 already seems to be in effect as a neighborhood trail on Road 450 was repaired after requests by local equestrians.

I recommend adding Objective 5-7 JDSF shall encourage and support volunteers to
5 assist with construction and maintenance of campgrounds and trails.

6 Goal #6 Information and Planning - Add Objective 6-5 JDSF shall revive the biannual newsletter which may be mailed or sent out on-line. While the newsletter was addressed in the Draft Plan, no newsletters have been circulated since 1999.

Regarding Goal #7, Protection, Objective 7-3, I agree that public contact should inform
7 users of rules but I also recommend that rules be posted at trailheads and campgrounds, also that CDF staff work with local people to addresshe three major JDSF problems -
8 vandalism, trash dumping and destructive use of off road vehicles.

Add Objective 7-5. State Forest staff should work with area residents to prevent vandalism, illegal dumping, and illegal use of off road vehicles.

Although the staff has been very cooperative in working with the Northern California Trails
9 Council, I would welcome more outreach from staff to the local community. After being involved with JDSF for over 30 years, I feel that this resource is valuable not only for the local community but as an example of multi-use of natural resources for the state, the nation and the world.

Yours truly, Nancy Barth

Mrs. Nancy Barth, 30201 Simpson Lane, Fort Bragg, CA 95437
(707) 964-3494 nbarth@mcn.org

RECEIVED
JUN - 4 2002

Letter NB-33

Response to Comment 33.1
Please refer to General Response 1.

Response to Comment 33.2
Please refer to General Response 1. The DFMP does not establish a formal mechanism to coordinate with the Committee to Restore Jackson Redwood Forest. Input in the form of comments regarding future CEQA review for individual projects will continue to be received by CDF. The State Forest Advisory Committee may provide an additional means of input for concerned citizens and/or organizations (DFMP, p. 91). The Committee provides overview and assists in the identification and prioritization of research and demonstration projects. The Committee is appointed by and serves at the pleasure of the Director of CDF and provides a source of council on specific issues brought to the Committee by the Director or staff on behalf of the Director. The Committee represents the entire State Forest system, with individual members of the Committee representing specific State Forests.

Response to Comment 33.4
Please refer to General Response 1. Comment is general support for Recreation goals of DFMP.

Response to Comment 33.5
Please refer to General Response 1. The DFMP does not specifically include plans for supporting and encouraging volunteer trail and campground maintenance or construction. Analysis of trails and campgrounds is in the DEIR Section VII. 14. Recreation, beginning on page 399.

Response to Comment 33.6
Please refer to General Response 1. The DFMP states intent to publish the JDSF newsletter on a biannual basis, but does not include the newsletter as a general management goal.

Goal #6 Information and Planning in the DEIR on page 29 was taken from the DFMP page 144. As stated on page 26,

> …Board Policy 0351.3 (et al.) sets forth goals and objectives for demonstration forests consistent with legislative purposes. Appendix II of the JDSF Management Plan provides specific project goals and objectives consistent with Board policy. The goals and objectives for the DFMP are synonymous with the project goals and objectives for this EIR.

Response to Comments 33.7 and 33.8
Please refer to General Response 1. DFMP page 107, states Recreation Resource Goals, including vandalism reduction. The DFMP does not include a specific requirement for trail or camp area signs for posting area rules.

Response to Comment 33.9
Please refer to General Response 1. The DFMP (page 97; p 10 of DEIR) allows for Educational Outreach that may include additional opportunity for trail maintenance.

EC-37

June 4, 2002

Dear Mr. Rooney,

I am writing about Jackson State Forest. I am concerned with the logging procedures. I feel that if logging is to continue the overall goal should be to show how that logging can co-exist with the public's enjoyment of the forest. There should be
1
2,3 no coverage management, clearcuts or use of
4 herbicides. All of Jackson State Forest should be used to demonstrate how to manage for recovery
5 of native plants and animals and for
6 maintaining clean water.

Sincerely,

RECEIVED
JUN - 6 2002

Ellen Corney
795-8th Ave. #201
San Francisco, Ca. 94118

Letter EC-37

Response to Comments 37.1
Please refer to General Response 1.

Response to Comments 37.2
Please refer to General Response 1.

Response to Comments 37.3
Please refer to General Response 1.

Response to Comments 37.4
Please refer to General Response 1. Commenter states that herbicides should not be used in JDSF. Proposed herbicide use is covered in the DFMP on pages 33 and 58 to 59. The use of herbicides is constrained in the DFMP for exotic plant control, hardwood control in the east end of JDSF, competition control in regeneration areas, and limited use for road maintenance. The Executive Summary of the DEIR (Section I.8 Areas of Controversy, beginning page 5) addresses the controversial aspect of pesticide use and CDF's position on pesticide use and Integrated Pest Management (IPM). Environmental effects of the planned use of herbicides are analyzed in the Hazards and Hazardous Materials section of the DEIR in Section VII.8, beginning on page 314. Planned herbicide use is further outlined and analyzed in the Specific Management Actions and Control of Competing Vegetation sections of the Biological Resource section of the DEIR (Section VII.6.2.4, beginning page 142; Section VII.6.3, beginning page 162). While the use of herbicides is controversial, the analysis of impacts concludes that there will be no significant impacts resulting from the use of herbicides on JDSF.

Please refer to General Response 9, Cumulative Impacts Summary, Cumulative Impacts of Pesticide Use. (p II-16).

Response to Comments 37.5
Please refer to Response PS-2.2.

Response to Comments 37.6
Please refer to Response PS-2.5

MW-45

June 20, 2002

Christopher P. Rowney
Demonstration State Forest Program Manager
Calif. Dept. of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA. 94244-2460

Jackson Demonstration State Forest
Draft Management Plan

Dear Mr. Rowney:

I have been a recreational user of JDSF for over 30 years and would like to comment on a few items in the Draft Management Plan.

1 1. The buffer zone around campgrounds and sensitive areas should be increased from 300 ft. to 500 ft.

2 2. Abandoned roads should be maintained as trails for non-motorized use.

3 3. To alleviate the illegal dumping of garbage, I recommend JDSF sponsor a monthly "free" day at the Fort Bragg and Willits refuse sites. This could be done a period of one year to monitor the effect it would have on illegal dumping.

4 4. All trails through a timber harvest area should be re-established. This requirement to be made part of individual harvest plans.

5 6 7 8 5. If you abandon Rd. 200 it should only be from the intersection of Rd. 200, 240 & 250 north to Three Chop Ridge (Rd. 1000). Trail access should be maintained on any abandoned road. Of course, abandoning Rd. 200 would exclude visitors to the waterfall. Access to the San Francisco Boys & Girls Camp and Camp Noyo Boy Scout Camp should be made from Sherwood Rd. (Mendocino County Rd. #419, then south on County Rd. 419A). You only have to experience the fast traffic on Rd. 200 to realize what it would be like if Three Chop Ridge was used as access to these camps.

9 6. Any lodging, conference centers, learning and interpretive centers should be located in Fort Bragg or Willits. We don't need any paved parking lots and buildings along Hwy. 20. The Georgia-Pacific mill in Fort Bragg (due to be closed in Nov.) would be an ideal place for this type of development. What better place to study the whole timber industry than at a mill with a working tree farm.

I am pleased that logging will continue, as this enables the use of JDSF to remain free to the public. There are very few things free anymore and the JDSF is one of the few remaining places where recreation and camping doesn't cost a family.

Sincerely

Mary Wells

Mary Wells
44401 Gordon Ln
Mendocino, CA. 95460.

RECEIVED
JUN 25 2002

Letter MW-45

Response to Comment 45.1
Comment noted. The DFMP specifies 300-foot protective buffers around the campgrounds. CDF has no current plans to increase the buffer to 500 feet. Campground buffers are discussed in the Recreation Section of the DEIR (Section VII.14, p 400).

Response to Comment 45.2
The DFMP (page 28) generally calls for, but does not require the development of trails on abandoned roads.

Response to Comment 45.3
CDF has no current plans to sponsor a "free day" at local refuse sites. Illegal dumping is subject to existing laws and ordinances and enforcement of those laws is beyond the scope of this EIR. CDF will continue to cooperate with local authorities to reduce illegal dumping on JDSF.

Response to Comment 45.4
The DFMP (page 28) calls for the re-establishment of trails through timber harvest areas. The DFMP additionally calls for an overall increase in trails.

Response to Comment 45.5-45.8
Specific trails to be opened or abandoned are beyond the scope of this Program EIR.
Please refer to the Recreation Section of the DEIR for general analysis of the DFMP proposed management of trails.

Response to Comment 45.9
The DFMP does not include specific plans for such a center. Site analysis for such a facility is beyond the scope of this EIR.

TF62

Sir, The more global warming, fires and the like take their toll on trees everywhere the more we need every single tree big or small, especially big, to combat the problem. Jackson State Forest due to its location and being in a Redwood (i.e Fog) belt is relatively safe from fires. Why let a few profit at the expense of the land and the many? Only reasonable thinning should be done there.

Thank You – T.S. Force

Letter TF- 62

Response to Comment 62.1
Please refer to General Response 1.

MA-65

June 27, 2002
Willits, California

California Dept. of Forestry and Fire Protection
POB 944246
Sacramento, California 94244

Dear Sirs,

The following are comments to your Draft EIR for the Draft Forest Management Plan for Jackson Demonstration State Forest.

While the preferred alternative (Alternative C) of the Draft Forest Management Plan (DFMP) will dedicate some 29 percent of the forest to a regime of clear-cutting and other even aged management prescriptions, the DEIR does not make a special study of how clear-cutting 14,100 acres repeatedly over a 120 1 year period will affect such aspects of the forest ecology as surface soil erosion, 2,3 water quality, mass wasting, or the ability of that part of the forest which is to be subjected to even aged management to regenerate to 100 percent of pre-harvest 4,5,6 levels of tree height, volume and vitality.

It is reasonable to assume several things about clear-cutting. One is that clear-cutting, when compared with select harvesting or no harvesting, increases soil erosion. From that reasonable assumption, a second assumption would logically follow. That is, that increased soil erosion will lead to a higher loss of soil nutrients and microrhyzoidial life, two elements of the soil which are essential to tree health and vitality.

From this, it would follow logically that repeated clear-cutting --or clear-cutting even once for that matter--impairs the forest's ability to fully regenerate, such that the average height and volume of a stand would be the same 150 years after a clear-cut as it was before the cut.

From this, it is reasonable to assume that clear-cutting will degrade the 7 forest. This is a significant adverse environmental impact.

Your DEIR does not address this issue. I believe that an EIR that does not 8 address the specific impacts of clear-cutting on long term forest health and viability is flawed and incomplete, and to conclude, as your DEIR does, that any 9 alternative considered in the DFMP will have no irreversible, significant, adverse environmental impact is premature, invalid and unsupported.

I have a further comment about your preferred alternative, Option C. In my view, CDF has made a big mistake in selecting that alternative. This is because that alternative fails to address the most pressing problem facing forestry today, 10 which is encouraging timberland owners to log sustainably in order to preserve the resource.

It is thought by many that economics requires that forests be cut on short rotations; however, calculations done in the past decade by Dr. Hans Burkhardt

indicate that maximizing forest profitability coincides with cutting at a rate of 1 percent of inventory per year.
(See attached essay by Dr. Burkhardt.)

I think CDF should be teaching industrial and private timberland owners that good, long term profitability and a high
11 degree of sustainability and resource protection can be met at the same time, by the same management strategy. If you could demonstrate this, you would be fulfilling your charge of demonstrating 'economical forestry' in this age of environmental concern, species and ecosystem collapse and global warming. It
12 would be a far better use of the demonstration forest than clear-cutting it.

It seems to me that the "all-age forest plan" proposed by the citizens advisory committee, which you designate Alternative D, comes close to Burkhardt's prescription, in that both plans would begin the management horizon
13 with an annual harvest of 20 million board feet. This level of cut (69 percent of the harvest level of the previous decade in JDSF) is appropriate for a working, publicly owned, demonstration forest.

I think CDF should adopt alternative D, the all-age management option,
14 instead of Alternative C.

Sincerely yours,

Mike A'Dair
21265 Locust Street
Willits, California 95490

Letter MA-65

Response to Comment 65.1-61.8
Please refer to General Response 2 and Response HW-196.1.

Response to Comment 65.9
Please refer to General Responses 1 and 2.

Response to Comment 65.10-61.14
Please refer to General Response 1.

TS-66

July 1, 2002

To: Christopher Rowney, Deputy Chief for State Forests
California Department of Forestry and Fire Protection
PO Box 944246
Sacramento, CA 94244-2460
Re: Draft Jackson Demonstration State Forest EIR

RECEIVED

Dear Deputy Chief Rowney,

We have the following comments to make on the Draft EIR for the proposed management plan for Jackson Demonstration State Forest:

We strongly oppose the Draft Management Plan for Jackson State. Some of our reasons are listed below.

1. This plan is not based on recent science. Statements asserting a lack of evidence regarding the effect of disturbance events or the value of corridors in forested environments ignores and contradicts extensive literature on both subjects. There are many published studies scientifically demonstrating the value of habitat corridors and the effects of disturbance on ecosystems that guide resource management policies nationwide.
2. We are neighbors of the forest who have already endured one THP with operations occuring just outside our property line. Past procedures for consulting with neighbors adjacent to harvest operations have been inadequate to say the least. This plan provides no clear description of proposed procedures for consulting with neighbors adjoining harvest operations, no quantitative minimums or ranges for buffer size, types of allowable harvest operations and allowable percentages of single-tree tree removal within buffer zones.
3. Jackson Demonstration State Forest has the potential to demonstrate whether old growth characteristics can be re-gown, yet the proposed management plan proposes to cut the oldest second-growth stands.
4. The plan is misleading. Despite comments of areas "set aside" and "restricted from harvest", the only areas protected in this plan are those excluded from operations by outside constraints imposed on CDF.
5. The plan does not prohibit use of herbicides in these important watersheds. We find this a glaring omission.
6. The plan focuses on efforts to grow trees faster to produce lumber more quickly. This philosophy ignores recent market trends. Lumber from second or third growth areas grown in the10-25 year cycles proposed by the plan, is poor quality and provides a poor price/value ratio. Consumers are rejecting such material, as evidenced by overstocked inventories and low demand for this product.
7. The total inventory of JDSF and claims that yield is increasing are difficult to analyze given the changing measurement methodology described. As a result, the data supporting projections appears misleading.
8. This plan defends and projects increasing harvest levels while providing no data on the potential consequences of reducing the total biomass of the forest.
9. Claims that Jackson State has increased productivity and timber stand defines "sustainable" as merely board feet grown vs. board feet cut. This narrow definition is outdated. A sustainable forest is a healthy ecosystem that provides lumber as well as healthy wildlife habitat while remaining reasonably secure from fire.

10. No provision in this plan increases staffing needed to prevent dangerous illegal activities or vandalism which currently occur frequently in the forest.
11. The plan claims that JDSF has habitat for a potential of 325 species, but there is no data to determine how much of that potential is realized. Actual species surveys are missing. Observations from local ecologists, birders and hikers indicate that Jackson Demonstration State Forest has very low diversity and poor abundance of wildlife for a forest of its size.
12. Despite statements that the plan will elevate wildlife, watersheds and ecosystem processes to a level of importance equivalent to timber management and the research, demonstration and education programs, it is apparent that producing revenue from selling timber is the primary objective from the budgets outlined. The substance of the plan itself is all about logging and the revenue to be generated with little financial or administrative support devoted to the other equally important issues.
13. There is no provision for law enforcement, improving the forest, or restoring logged areas. Currently, recently logged areas are filled with debris, piles of slash, and rapidly invading exotics (and vandals). The increased fire danger from this dry and piled debris is apparent. The plan outlines issues such as exotic weed invasion and illegal activities but provides no corrective measures.
14. The community has strongly expressed the mandate that a significant portion of the revenue generated from timber sales in JDSF must be dedicated to wildlife habitat and watershed protection, as well as research and education programs in JDSF. This is ignored in the plan.
15. Group selection (clear-cutting) any grove of trees without taking into account the effects of changing micro-climates in pocket groves or the overall effect of global climate change on the modern regenerative potential of this ancient ecosystem is unacceptable. Yield tables from 1930 and 1963 that were developed from data of previous clear cuts are not reliable today.
16. This plan does not provide for its own enforcement of timber harvest rules. There is insufficient staff for monitoring and enforcement. Licensed Timber Operators (LTOs) cannot be made to follow Timber Harvest Plans (THPs) without staff dedicated to monitoring and enforcement during operations. This plan invites THP violations in that the LTO provisions almost ensure that the highest bidder for timber will sell to the lowest bidding Operator. Clear provisions of THP's can be disregarded and violated by the LTO with no consequence to the operator, but grave consequence to the forest. CDF loses credibility when it does not provide staff and financial support to enforce its rules.
17. Statements such as "The variety and quality of habitats is expected to increase through the planning period and beyond" have no actions or measurable outcomes associated with them. Presumably this increase in variety and quality of habitats occurs because of the plan's commitment to the recruitment of "late seral stages", yet the statement that "level of the annual harvest will increase over the coming decades" contradicts this goal.
18. Public input is noted in its section, but no financial or administrative provision is described to act upon any suggestions, or to enforce restrictions or rules already in place. The publics' statements and desires are considered and good intentions are outlined, but there is no administrative or financial support provided to carry out these promises.

We strongly urge you to carefully review comments from the qualified scientists who do not profit from the exploitation of the forest, and yet are taking the time to review this plan. There is a strong community feeling that only those who profit from this forest are

having any real say in its management. There is strong apprehension that the board of Forestry is a rubber stamp for these interests and that political contributions drive forest management policy. It is clear to long-sighted leaders, legislators, agencies and citizens that our economy is changing and tourism, not timber and lumber are Mendocino County's future. Squandering the aesthetics and value of one of our largest tourist assets, Jackson Demonstration State Forest, for short-term revenue to fill the State's coffers, or to inflate political campaign war chests at the expense of the local economy is reprehensible and unacceptable.

Sincerely,

Tanya Smart
Brent Wright
17660 Redwood Springs Drive
Fort Bragg, CA 95437

cc/ Assemblymember Virginia Strom-Martin
Senator Wes Chesbro
Supervisor Patty Campbell
Governor Gray Davis

Letter TS-66

Response to Comment 66.1
Please refer to General Response 2.

Response to Comment 66.2
Please refer to General Response 1 and 7. These types of measures would be developed on a project specific basis when necessary. The DFMP specifies 200-foot limited harvest buffers to minimize the impacts on neighboring property owners. These buffers are listed as Special Concern Areas (DFMP page 7), and discussed on page 49 of the DFMP.

Response to Comment 66.3
Please refer to General Response 1 and 7. These types of measures would be developed on a project specific basis when necessary.

Response to Comments 66.4 and 66.5
Please refer to General Response 1 and 7. These types of measures would be developed on a project specific basis when necessary.

Response to Comment 66.6
Please refer to General Response 5.

Response to Comment 66.7
Please refer to General Response 1.

Response to Comment 66.8
Please refer to General Response 1 and 2.

Response to Comment 66.9
The DFMP and the DEIR do not include the concept of growing merchantable trees in 10 to 25 year cycles. Please refer to General Response 1.

Response to Comment 66.10
The inventory methods used and growth projections are fully described in the DEIR or the included in Alternative "A" of the DEIR. The methods were analyzed as part of the DEIR process and were found to be acceptable.

Response to Comment 66.11
The proposed harvest levels are less than projected growth resulting in an increase of timber inventory over time. This should not lead to a reduction of biomass.

Response to Comment 66.12-66.14
Please refer to General Response 1.

Response to Comment 66.15
Staffing and budget issues are beyond the scope of the EIR.

Response to Comment 66.16-66.18
Please refer to General Response 1.

Response to Comment 66.19
Law enforcement is beyond the scope of the EIR. The DFMP provides extensive discussion on forest restoration.

Response to Comment 66.20
The DFMP and the DEIR include discussions regarding Integrated Weed Management. Law enforcement is beyond the scope of the EIR.

Response to Comment 66.21
Budget issues are beyond the scope of the EIR.

Response to Comment 66.22-66.23
Please refer to General Response 2.

Response to Comment 66.24-66.25
Issues regarding enforcement of the Forest Practice Rules are beyond the scope of the EIR.

Response to Comment 66.26-66.27
Please refer to General Response 1.

Response to Comment 66.28-66.29
Staffing and budget issues are beyond the scope of the EIR. Please refer to General Response 1.

BLW-67

RECEIVED
JUL - 8 2002

Betty Lou Whaley's Comments on:
The Draft EIR for the Comprehensive Update to the
Jackson Demonstration State Forest
Draft Management Plan - June 28, 2002

In Volume 1 on page 319 - In a personal communication, William Baxter states that herbicide use is anticipated *"to inhibit regrowth of hardwoods and maintain high conifer occupancy in harvested areas...it is expected that some stands may benefit from supplemental herbicide application to prevent cut tanoaks from resprouting..."*

1 Jackson State Forest is an important watershed for our area and drains into many creeks and several rivers. We need to know that our surface and ground waters are carefully protected from poisons. Jackson State Forest is home to deer—salmon spawn there—and
2 oak from the forest is burned by locals for fuel. We need to know that eating a meal of wild Mendocino Coast salmon or venison barbecued over a tanoak fire won't become the hidden cause of spontaneous abortions, birth defects (even as slight as mental retardation) or cancer.

Just this month 1,2-D which was banned 17 years ago was found in deep wells at Smith River in Northern California. I think that we must learn from the mistakes of the past: the time has come to stop all use of economic poisons. The time has come to put people to work, not chemicals. It is obscene to poison any part of the web of life on earth.

Any attempts to justify using economic poisons instead of human workers in financial equations must include the costs to individual families and to society as a whole that could result from chemically induced illnesses or birth defects.

Also, I think that it is shortsighted to destroy tanoak and other native hardwoods in order to grow a coniferous monoculture for the benefit of giant corporate wood chippers. Our area has gained a world-wide reputation for fine woodworking and many of the beautiful woods used by the skilled woodworkers here come from forests in Africa, South America and other places where those exotic trees are not being replanted. Where will the woodworkers of the future get their hardwoods?

A program to grow hardwoods in Jackson State Forest should be started right away.
3 Along with tanoak, the following trees could be used to make fine furniture: black oak, chinquapin, big leaf maple, black acacia, poplar, holly, yew, madrone, pear, ash, beech, black walnut, cashew, sycamore.

4 Finally, I would like to see mushrooms grown in Jackson State Forest for their mycorrhizal properties—to help the trees grow and to maintain the fertility of the duff. *
5 Many edible varieties could be grown which would enhance local dining and provide much-needed income for pickers. There are other varieties that could be grown for use as
6 non-toxic dyes for textiles.

Jackson State Forest MUST be managed for multiple uses that will benefit a broad spectrum of the public—NOT as a subsidized tree farm providing cheap logs for multinational corporate cut-and-runners.

* SEE: PAUL STAMETS' WEB SITE — WWW.FUNGI.COM

Letter BLW-67

Response to Comment 67.1
Comment noted. Please refer to the Hazards and Hazardous Materials and Biological Sections of the DEIR (Section 8) for discussion of impacts and mitigation related to the use of herbicides. The DEIR completed an evaluation of the proposed herbicide use on JDSF and found that no significant environmental effects would result from the proposed use. Please also refer to Response EC-37.4.

Response to Comment 67.2
Please refer to General Response 2. Current standards were used to assess the risk of impacts associated with herbicides. The impacts were determined to be less than significant with mitigation.

Response to Comment 67.3
The DEIR completed an evaluation of the proposed hardwood management proposed in the DFMP and found that no significant environmental effects would result from the proposed practices. Also, refer to General Response 1.

Response to Comment 67.4-67.6
Please refer to General Response 1.

CK-70

Christopher Knipp
1704 Walnut Street
El Cerrito CA 94530

Christopher P. Rowney
Program Manager, CDF
P.O. Box 944246
Sacramento CA 94244

Dear Mr. Rowney:

I would like the following comment incorporated into the public comment record on the Jackson State Forest draft management plan.

1 I think it is most unfortunate and counter to the interests of the general public that this draft plan does not follow the recommendations of the citizens' advisory committee calling for protection of the ecological values of the forest: for elimination of clearcutting, for stream protection zones, for late seral restoration of large portions of the forest (including the greater Woodlands area and all stands of unentered second-growth larger than 100 acres); that any timber operations focus on ecosystem restoraton and protection to habitats; that repair, decommissioning and conversion of roads to trails should be accelerated.

2 Campsites should be increased two or threefold, hiking trails should be vastly increased over the next five years, and new campgrounds should be rustic and widely dispersed and the present sites' current character should be maintained.

Sincerely yours,
Christopher Knipp
Christopher Knipp

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JUN - 4 2002

Letter CK-70

Response to Comment 70.1
Please refer to Response MW-45.4 and MW-45.5.

Response to Comment 70.2
Please refer to General Response 1 and Response MD-12.7. Hiking trail and campground management plans are discussed in the Recreation Section of the DEIR (Section VII.14).

ET-71

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JUN - 2002

May 29, 2002

Dear Mr. Rounes,

My concerns for the Jackson State Forest concurs with other fellow citizens and employees at the CDF. They are as follows:

1 1) The harvest of old-growth forest may affect wildlife habitat adversely.

2 2) Continued timber harvesting will adversely affect water quality

3 3) Threatened or endangered species could be affected by timber harvesting

4 4) Soil erosion may result from too much timber harvesting.

I wish that the Jackson State Forest could be managed with the least amount of development as possible. In other words as close to a wilderness area designation as possible.

5

Thanks!

Elinor Taylor

Elinor Taylor
1311 Herbert St.
Sonoma, CA
95476

Letter ET-71

Response to Comment 71.1
Please refer to General Response 4.

Response to Comment 71.2
Please refer to Response PS-2.5

Response to Comment 71.3
Please refer to General Response 5.

Response to Comment 71.4
Please refer to Response HW-196.1.

Response to Comment 71.5
Please refer to General Comment 1.

Demonstration State Forest Program Manager
California Department of Forestry & Fire Protection
Sacramento, CA 94244-2460

07/02/02

AF-93

RECEIVED

Anna-Lisa Foster
621 Taylor St. #21
San Francisco, CA 94102

Dear Mr. Rooney,

I am writing to you regarding the Environmental Impact Report for Jackson Demonstration State Forest. I do not want the California Department of Forestry to continue logging in Jackson. The EIR should take into account the cumulative impact of the logging that was completed under the out-dated management plan, as well as the logging taking place in surrounding private lands. Many endangered species need large corridors in order to survive. I want the Environmental Impact Report to provide for the safety of those species through habitat preservation. The CDF must choose the environmentally superior alternat for its management plan for Jackson. In addition, I want the CDF to take into account the science-based facts gathered from the public as well as from the Department of Fish and Game and the Regional Water Quality Control Board. Since Jackson is our largest state forest, we are setting an example of how Californian manage their public lands. Please include my comments as part of the public Record

Sincerely,

Letter AF-93

Response to Comment 93.1
Please refer to General Response 9.

Response to Comment 93.2
Please refer to General Response 1. The preservation of habitat is thoroughly provided for under the DFMP and impacts to sensitive species are analyzed in the Biology Section of the DEIR.

Response to Comment 93.3
CDF is not required to choose the environmentally superior alternative under CEQA. The environmentally superior alternative is not the preferred alternative because it does not meet CDF's legislative mandate and does not meet the project objectives. Also, please refer to General Response 2.

TF-97

Tina Fabula
P.O. Box 2850
Yountville, CA 94599
(707) 738-5155
cfabula@mcn.org

July 1, 2002

Christopher P. Rowney, Demonstration State Forest Program Manager
California Department of Forestry and Fire Protection
Jackson Demonstration State Forest
P.O. Box 944246
Sacramento, CA 94244-2460

Re: comments on Draft EIR for the Jackson Demonstration State Forest

I recently read the Draft Management Plan for Jackson Demonstration State Forest and support the Department of Forestry's renewed interest in research and demonstration. The Draft EIR evaluates the impacts of the preferred Management Plan (Alternative C) which calls for a slight increase from the current harvest levels (from 29 MMBF to 31 MMBF), while at the same time "actively maintaining and recruiting additional habitat needed for listed species and other species of concern". Alternative D (All-Age Emphasis) was developed from recommendations of a 17-member board appointed by former Director Wilson and is described by using harvest limitations and protections similar to the USFS Federal Ecosystem Management Assessment Team (FEMAT). Alternative D is also described as having a lesser harvest (about 20 MMBF per year), increased protection standards in riparian buffer areas, and a greater recreational emphasis.

It would seem beneficial to incorporate the forestry and protection measures of Alternative D into the final adopted Management Plan for Jackson State Forest as a logical area for quantitative research and demonstration. It would provide valuable information on what is adequate or what is gained in regards to watershed and species protection. It would also allow a scientific comparison between two widely accepted forestry approaches and provide greater consideration to increased public demand for fish and wildlife protection and greater recreational access.

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JUL - 8 2002

Letter TF-97

Response to Comment 97.1
Alternative C, the preferred alternative, allows for research and demonstration of all types of forest activity, including the forestry and protection referred to in comment.

JB-104

July 1, 2002

Demonstrations State Forest Program Mngr.
Mr Rooney,

I'd like to register my opinion with you regarding the commercial logging in Jackson Demonstration State Forest.

It is my understanding that many old growth trees are in jeopardy of being cut. Since this is our largest public forest it seems important to protect these ancient trees from commercial logging. I would hope you would encourage the demonstration of restoration techniques so that Jackson could be used as a model for other second growth forests.

This is also especially important since there are no old growth trees in the private forests that surround Jackson Demonstration Forest.

Please hold Jackson Demonstration Forest to it's mission as a restoration forest. Please oppose the commercial logging of old growth trees.

Sincerely,

Jenne Benson Aikman
48 Whitney Ave
Los Gatos, CA 95030

JUL 1 0 2002

Letter JB-104

Response to Comment JB-104.1
Please refer to General Response 1.

TS-105

COLLEGE
OF THE
REDWOODS

July 7, 2002

To: Christopher P. Rowney, Demonstration State Forest Manager
CDF P O Box 944282
Sacramento Ca 94244-2460

From: Teresa Sholars
Professor of Biological Sciences
Mendocino Coast Campus
College of the Redwoods
1211 Del Mar Drive
Fort Bragg, CA 95437

707 962 2686 voice mail
email:Teresa-Sholars@Redwoods.edu

Re: Draft Environmental Impact Report
Jackson State Forest Management Plan

It is very clear from reading the draft EIR that from the botanical point of view it was written and compiled either by people who had actually not ever been to the Jackson State Forest site, or by people whose botanical knowledge was not adequate for this job. I know there are people who have more extensive and accurate knowledge of the botanical resources of Jackson. This is a cumbersome and poorly written document.

A few comments to illustrate my point:

1. The vegetation descriptions were simply copied from *A Manual of California Vegetation*, and are types that do not accurately reflect the plants that actually grow in Jackson State Forest. On page 131 in describing the Red Alder series, vine maple is listed as an understory plant. This plant does not occur in Jackson. On page 133 in describing the Bishop Pine series, Monterey Pine is listed as an associate native species. It is not native to Mendocino County. It is planted as an ornamental, but is not a part of the native Bishop Pine stands. Note that the vegetation classification system of the Calif. Department of Fish and Game (CDFG) is currently undergoing revision. In any case, it is not appropriate to merely copy text from a work that is meant as a general guideline.

2. In the invasive exotic species section on page 134, several species were omitted. Plants on the A1 list that occur in the forest and have a potential to become a problem yet were not listed include *Tamarix* spp (Tamarisk) and *Foeniculum vulgare* (Fennel). Not even included was List A2 - the most invasive wildland plants in regional areas. Both *Cotoneaster* and *Mentha pulegium* (Penny Royal) occur with enough frequency to become a problem in JDSF.

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JUL 1 0 2002

COLLEGE OF THE REDWOODS

3. On page 136 it states, "It is not known whether Himalayan blackberry exists in Jackson." This statement alone shows that either the local people who work in the forest either were not consulted to give accurate information or that these local people are not knowledgeable about the problem plant species in Jackson. This invasive plant is common within the State Forest.

4. The special plant list on page 137 includes plants that grow in habitats that do not occur in Jackson State Forest (coastal dunes, coastal prairie, coastal bluff scrub) and therefore includes many species that could not possibly occur in Jackson (the *Castilleja, Lasthenia, Phacelia)* and the lists omits several plants likely to occur in Jackson such as the following:

Name	CNPS	RED	Fed/St	Habitat
Boschniakia hookeri		2 3-1-1		NCFrs
Gentiana setigera	1B	3-2-2		LCFrs, MdwSp/mesic
Glyceria grandis (streambanks)	2	3-1-1		BgFns, MdwSp, MshSw
Howellia aquatilis	1A	NA	FT	MshSwFW
Microseris borealis	2	3-3-1		BgFns, LCFrs, MdwSp/mesic
Montia howellii	2	3-2-1		MdwSp, NCFrs, VnPls/vernally mesic

5. On page 143 it says that there are 6 plant species of concern known to occur in Jackson. I know personnel at JDSF are aware that *Lycopodium clavatum (*Club Moss, *Calamagrostis bolanderi* (Bolander's Reed Grass) and *Mitella caulescens* (Leafy-stemmed mitervort)occur in the JDSF. Why were these species left out of the known sensitive species found in JDSF? Where are the other species of concern, such as *Sidalcea malachroides* (Checkerbloom), that must have been found during past THP work?

6. On page 144 under "Habitat Management Practices" the Plan states that "Limited removal of pygmy manzanita, pygmy cypress or Bolander's Pine may occur as a result of habitat development projects for the Lotis Blue butterfly." Where did this idea come from? One cannot destroy habitat for three sensitive species and one sensitive habitat in order to "create" habitat for a possibly extinct butterfly, whose habitat requirements are poorly understood. All three of those plants are CDFG special species, and when they occur together they comprise the Pygmy Forest, which not only is an ESHA (Environmentally Sensitive Habitat Area), but federally designated as wetlands. Where is the documentation justifying this move as a sound scientific development project?

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Besides the inaccurate botanical details illustrated above there are several elements that are completely lacking in the plan.

7. A floristic survey is needed to determine sensitive plant species. It is required by CDFG and CNPS in their guidelines for botanical surveys that floristic surveys be done when surveying for sensitive species. There is no list of plant species that occur in JDSF. The creation of a complete list of plant species in

JDSF is important in not only generating baseline data for current research, but it is a requirement for every THP that is permitted.

COLLEGE OF THE REDWOODS

8 It is important that a monitoring plan for sensitive plant species be created for JDSF. Page 107 talks about monitoring but the report completely omits any plan to monitor sensitive plant species. This is a serious omission that must be rectified.

9 If JDSF is truly a demonstration forest where research is done on forest management practices while producing timber revenue for the state of California, we cannot do a poor job on the research goal and continue to log to produce revenue. It is imperative that the Management Plan contain detailed goals for creating baseline data in order to use that information to make management decisions. The Plan completely lacks any provision for accomplishing that goal. Therefore the Plan needs to be written in a way to generate guidelines so the managers of JDSF can start operating JDSF as a demonstration and research forest and not just as a revenue source.

10 The redwood vegetation type is one of the best types of conifer system for producing timber. Redwoods sprout from the stump and the climate is very conducive to revegetation through natural succession. We need to take advantage of this. We must utilize this wonderful site to gain knowledge on the best kind of forest management practices, while continuing to preserve sensitive species and habitats.

It is important that you do not certify the DEIR for Jackson Demonstration State Forest before redoing the botanical section. Please feel free to contact me for questions.

Sincerely

Teresa Sholars

Teresa Sholars
Professor of Botany, College of the Redwoods
Rare Plant Coordinator for the Dorothy King Young Chapter of CNPS

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Letter TS-105

Response to Comment 105.1 (A-D)

105.1A.
It is true that ***A Manual of California Vegetation*** (MCV; Sawyer and Keeler-Wolf 1995) was used, as was Holland's ***Preliminary Descriptions of the Terrestrial Natural Communities of California*** (1996), to generally describe the vegetation at JDSF. Each classification system has strengths and weaknesses and fit the actual local conditions to varying degrees. The EIR uses the developed types where appropriate to provide published references for the reader to refer to. Sawyer and Keeler-Wolf was referred to more frequently in the DEIR since it is becoming the most commonly-accepted standard for vegetation classification in California based on the quantitative nature of the classification (CNPS 2001). The series do not perfectly fit the actual vegetation because the classifications were based on sampling done in different regions that contain slightly different species composition and environmental variables. Holland's classification can be useful, but it is based on natural communities, and therefore (as with Sawyer and Keeler-Wolf's classification) it may not be robust enough to encompass the variation caused by disturbances (harvest and fire) at JDSF. It is true that a site visit would have greatly assisted in the development of the habitat and vegetation descriptions; based on monetary and time constraints, only available information was used description development.

Additionally, the general descriptions are not meant to be site-specific. They are meant to give members of the public an idea of what general habitat and vegetation characteristics, particularly common versus rare components, exist at the JDSF. CDF personnel acknowledge that the vegetation descriptions are not perfect, yet they believe that the descriptions, with the proposed text modifications (see below and Response to Comments GJ-236.10), suffice in providing enough information for obtaining a general idea of the common and uncommon/sensitive vegetation components at JDSF. In a programmatic EIR, general descriptions suffice by identifying uncommon/sensitive vegetation components (e.g. pygmy forest) that should not receive significant impacts and by identifying the more common vegetation types that can receive some level of impact but that should be maintained and not significantly decreased or eradicated. Descriptions of the vegetation will be more descriptive in each project-level CEQA review.

The changes recommended herein are intended to update the sections noted. Updates to the vegetation descriptions incorporate the comments made in the TS-105 comment letter and incorporate information recently obtained from CDF personnel familiar with the JDSF vegetation. Please refer to Response 105.1B, .1C, and 1D, below.

105.1B.
According to CDF personnel, man-root (***Marah*** spp.) is not common at JDSF, so this taxon should not have been included in the DEIR. The first paragraph in the Redwood Series

description (p. 131 of the DEIR), second-to-last sentence, “man-root (***Marah*** spp.)” should be removed from

the sentence. Additionally, chain fern (***Woodwardia fimbriata***) and deer fern (***Blechnum spicant***) are found in moister microsites and are not common enough to include in the Series description.

Therefore the first paragraph in the Redwood Series description, second-to-last sentence, **"**chain fern ***(Woodwardia fimbriata)"*** and **"**deer fern ***(Blechnum spicant)"*** should be removed from the sentence.

According to comment letter TS-105, vine maple does not occur on JDSF. The first paragraph in the Red Alder Series, second-to-last sentence**, "**vine maple ***(Acer circinatum)"*** should be removed from the sentence. According to CDF personnel, Sitka spruce should not be included in the commonly associated species list under the Red Alder Series. The first paragraph in the Red Alder Series, second sentence, **"**Sitka spruce ***(Picea sitchensis)"*** should be removed from the sentence.

105.1C.
It is true that Monterey pine (***Pinus radiata***) is planted as an ornamental in Mendocino County. CDF personnel recently communicated that the experimental plantings of Monterey pine are not believed to have spread or naturalized enough to be considered part of the Bishop pine community. The first paragraph in the Bishop Pine Series (p. 133 of the DEIR), second sentence, **"**Monterey pine ***(Pinus radiata)"*** should be removed from the sentence**.**

105.1D.
It is noted that the vegetation classification system of DFG is currently undergoing revision.

Also, please refer to Response 105.1A.

Response to Comment 105.2
Section 6.2.1, on Page 134 "Invasive Exotic Species" of the DEIR should include the following:

> Invasive Exotic Species
>
> Invasive exotic species can cause negative impacts to native species assemblages and can greatly impact native diversity. Rare native plant species that are associated with forest clearings are especially vulnerable to displacement by exotic invasives. Such rare plants include Humboldt milk-vetch (***Astragalus agnicidus***), Bolander's reed grass (***Calamagrostis bolanderi***), and maple-leaved checkerbloom (***Sidalcea malachroides***) (DFG comments on JDSF DEIR 2002).
>
> There are currently five species of invasive exotic plants that occur in substantial frequency across the JDSF. All are on the California Exotic Pest Plant Council (CalEPPC) List A-1 (the most-invasive wildland pest plants with widespread

occurrence). These are pampas grass (***Cortaderia jubata***), Scotch broom (***Cytisus scoparius***), French broom (***Genista monspessulana***), yellow star-thistle (***Centaurea solstitialis***), and Tasmanian blue-gum (***Eucalyptus globosus***).

Additional List A-1 species that occur on JDSF and have the potential to become more invasive on the Forest are Himalayan blackberry (***Rubus discolor***), gorse (***Ulex europaea***), English ivy (***Hedera helix***), wild fennel (***Foeniculum vulgare***) and tamarisk (***Tamarix spp***.). Gorse occurrence is currently limited to the Western WWAA. . Another List A-1 plant, Cape-ivy (***Senecio mikanioides***), is known to be located in two isolated places within JDSF.

All of the above-listed A-1 species are widespread throughout much of California (with pampas grass and Cape-ivy restricted primarily to the coastal regions); all thrive in disturbed habitats. The various roads and skid trails, forest openings, and other ground-disturbed areas provide habitat for further infestation by invasive species.

List A-2 (the most invasive wildland pest plants in regional areas) plants known on JDSF (Public Comment Letter TS-105) are cotoneaster (***Cotoneaster spp***.) and pennyroyal (***Mentha pulegium***). Both occur with enough frequency to become a problem on the Forest.

Beginning in DEIR Section 6.2.1 on page 134, the following section should have included the following species among the existing species accounts in this section:

Cotoneaster spp.--***cotoneaster.*** Native to China, cotoneaster is a popular shrub or small tree in local landscaping. This member of the rose family (***Rosaceae***) has small pink to white flowers producing heavy crops of bright orange to red berries, which are attractive to birds and wildlife. ***C. franchetti*** has escaped into our coastal forests, where it readily becomes naturalized. Spreading rapidly by seed and root sprouts, it becomes a problem by displacing native shrubs (Pickart and Eicher 2000). Rosatti (in Hickman 1996) reports ***C. pannosa*** as also occurring in mixed-evergreen forests of the region. The CalEPPC List A-2 also registers ***Cotoneaster lacteus*** as occurring in many coastal plant communities. Additional Cotoneaster species, in general, are included by CalEPPC on its List of Exotic Pest Plants of Greatest Ecological Concern that Need More Information.

Cotoneaster is common in the region, and frequently observed on JDSF (Public Comment Letter TS-105).

Foeniculum vulgare--wild fennel. Wild fennel is in the carrot family (***Apiaceae***). Native to southern Europe, wild fennel is widely escaped from cultivation in the Western Hemisphere, and is locally abundant and invasive (Hickman 1996). Wild fennel is perennial, with flower stalks growing to more that 3 m tall. It smells strongly of licorice or anise. Wild fennel invades roadsides and disturbed

sites where it out-competes native plants. This List A-1 weed spreads by seed, and persists because of its strong taproot. By comparison, the cultivated garden herb, fennel (***Foeniculum dulce***), is classified as non-invasive by CalEPPC.

T. Sholars (Public Comment Letter TS-105) has observed wild fennel occurrence on the Forest, and considers it to have the potential to become a problem there.

Hedera helix--English ivy. English ivy is a shiny-leaved, woody vine belonging to the ginseng family (***Araliaceae).*** Palmately-lobed leaves are borne on juvenile stems, while those on mature stems are generally entire. Native to Eurasia, this plant was introduced to North America by early European settlers (Hickman, 1993). English ivy is usually first established in a disturbed site, then aggressively spreads to the surrounding forest by vegetative growth as well as by seed from its black berries. There are no natural controls for English ivy. The vines grow along the ground engulfing and smothering all shrubs, grasses, and forbs by its overgrowth. The vines attach to trunks of larger shrubs and trees by aerial rootlets, and continue to grow upwards reaching for sunlight. The woody vines encircle tree trunks, inhibiting tree growth and vigor. The ivy vines also spread over the branches and foliage of the tree canopy. Native plant life becomes smothered and dies beneath the dense growth of English ivy. Such habitats are commonly alluded to as "ivy deserts."

English ivy is known to occur in the region and on the forest; and can be a serious forest pest (especially in riparian areas) where it can out-compete, overgrow, and kill the understory plants, as well as the trees, of the forest canopy.

Mentha pulegium--pennyroyal. Pennyroyal, a member of the mint family (***Lamiaceae),*** has upright to trailing stems producing relatively short flowering spikes (up to one foot or taller) with lavender-colored flowers arranged in progressively larger globular flower heads down the stalk. All parts of the plant have a strong characteristic minty odor.

It has invaded local wetlands and moist areas along roadsides and ditches. Because of the many resprouts from its rhizomes (underground stems), this species can form dense, impenetrable mats that choke out native plants (Pickart and Eicher 2000). T. Sholars (Public Comment Letter TS-105) reports that pennyroyal occurs with enough frequency in JDSF to pose a threat in favorable sites.

Tamarix spp.--tamarisk or salt cedar. Tamarisk is in its own family, the ***Tamaricaceae***. It is a shrub or tree with minute leaves and flowers. Wilken (in Hickman 1996) reports two species of tamarisk that occur regionally: ***T. parviflora*** from southeastern Europe (< 5 m tall), and the less common ***T. gallica*** that is native to southern Europe (< 8 m tall). Using a hand lens, the two can be readily

differentiated by their floral parts that are in 4's and 5's, respectively. Tamarisk prefers sunny sites with good soil drainage. Both species can be found in washes and along roadsides (***T. gallica*** less commonly. ***T. parviflora*** is also found on slopes and sand dunes, while ***T. gallica*** prefers flats). Tamarisk is used horticulturally for windbreaks and is planted as an ornamental. It readily escapes into wildlands, where the deep roots lower the water table to out-compete shallow rooted natives.

Known to occur on JDSF (Public Comment Letter TS-105), tamarisk potentially could become invasive.

In addition, the following corresponding reference should have been added to the Please references section of the JDSF EIR:

Pickart, A. and A. Eicher. (2000). ***Invasive Weeds of Humboldt County: A Guide for Concerned Citizens***. 14 pages Arcata: Bug Press.

Response to Comment 105.3
Section 6.2.1, on Page 136 "Invasive Exotic Species" of the DEIR should have included the following:

Rubus discolor--Himalayan blackberry. Himalayan blackberry is a robust, evergreen, arched bramble in the rose family (***Rosaceae***). Its brambles can grow to 3 meters tall (Munz and Keck 1959). Stems are 5-angled, 5 to 15 mm in diameter, and contain many prickles (Hickman 1993). Leaves are compound (often with five leaflets but sometimes three), sharply toothed, and white below. Inflorescences are many-flowered panicles of white to pink flowers. Fruits are shiny black drupelets clustered in an oblong shape (Hickman 1993, Munz and Keck 1959). Plants inhabit a variety of disturbed habitats at less than 1,600 meters in elevation and are native to Eurasia (Hickman 1993). Apparently, rats favor them for food and shelter.

The common occurrence of Himalayan blackberry within some areas of the JDSF (DFG comments on JDSF DEIR , and Public Comment Letter TS-105) indicates that it can spread readily on the Forest. This species has the potential to spread primarily to areas that are near existing concentrations and where openings are maintained for a sustained period of time.

Response to Comment 105.4
Please refer to responses to comments GJ-236.6, 236.7, and 236.10, for updates in species information.

The TS-105 comment letter cites three species that should be considered as "likely to occur" on JDSF, including ***Gentiana setigera*** (Mendocino gentian), ***Howellia aquatilis*** (water howellia), and Microseris borealis (northern microseris). Northern microseris was formerly known (now

extirpated) from the Mendocino (569D) USGS 7.5' quadrangle, and while it is generally only known to inhabit relatively high elevation (1000-2000 m) bogs and fens, Lower Montane Coniferous Forest, and Meadows/vernally mesic (CNPS 2001), it should be considered a species to watch for. Mendocino gentian occurs on the Noble Butte (600B) 7.5' quad in northern Mendocino County and also in Del Norte County in mesic Lower Montane Coniferous Forest and Meadows. Water howellia occurs on the Buck Rock (597B) and Leech Lake Mountain (598A) 7.5' quads in northeastern Mendocino County in freshwater marshes and swamps. Although both species have preferred habitat types that occur on JDSF, their distance from the JDSF and project 7.5' quads warrants the status of "watch for" rather than "likely." Regardless of whether these three species have a "likely" or "watch for" designation in Appendix 8D-3, the wide-ranging scoping process should incorporate these three species when preparing for botanical surveys. Please refer to Response to Comment GJ-236.10L, Mitigation 2, for text that incorporates the use of Appendix 8D-3 in the scoping process.

The following should be changed or added to Appendix 8D-3 of the final EIR with the following text (add in alphabetical order):

- Add ***Gentiana setigera*** "Mendocino gentian," CNPS list 1B, RED 3-2-2, State None, Federal None, Decision and Rationale: Watch for (Lower Montane Coniferous Forest and Meadows/mesic in northern Mendocino and Del Norte Cos.; public comment letter TS-105 requested species be considered as likely to occur.)
- Add ***Howellia aquatilis*** "water howellia," CNPS list 2, RED 3-2-1, State None, Federal FT, Decision and Rationale: Watch for (freshwater marshes and swamps in northeastern Mendocino Co.; public comment letter TS-105 requested species be considered as likely to occur.)
- Change the Decision and Rationale row for Microseris borealis to state: "Watch for (Bogs and Fens, Lower Montane Coniferous Forest, Meadows/mesic; public comment letter TS-105 requested species be considered as likely to occur.)"

Response to Comment 105.5
Please refer to Responses to Comments GJ-236.6A and 236.10L for updates on known occurrences of sensitive plant species.

Response to Comment 105.6
Please refer to Responses to Comments GJ-236.10H and 236.10L, Mitigation 5 for updates to the Habitat Management Practices section of the DEIR and DFMP.

Response to Comment 105.7
Please refer to Responses to Comments GJ-236.10G and 236.10L, Mitigation 3 for text changes that incorporate using DFG survey guidelines as the basis for developing project specific botanical surveys.

Response to Comment 105.8

A mitigation monitoring plan is included at the end of each resource specific section. The mitigation in the Biological Section of the DEIR was developed to reduce the impacts of the JDSF DFMT to a less than significant level. Further comprehensive sensitive plant monitoring on JDSF is not feasible at the present time. Additional CEQA review to minimize impacts, however, will occur at the project level with individual THPs and other projects. Please also refer to General Response 2 and 6.

Response to Comment 105.9
Please refer to Responses to Comments GJ-236.8, GJ-236.9, GJ-236.10K, GJ-236.25b, and GJ-236.46.

Response to Comment 105.10
Please refer to General Response 1.

BG-114

Re:Jackson State Forest DEIR & DMP

July 8,2002
Box 1321
Mendocino, Ca. 95460

Christopher Rowney
Dept. of Forestry and Fire Protection
P.O.Box 944246
Sacramento, Ca. 94244-2460

1 This letter is written to state my opposition to the Draft Management Plan for Jackson State Forest and to comment on the Draft Environmental Impact Report. I oppose the large scale commercial logging, the herbicide use, the cutting of old second growth stands,the clearcuts and the lack of adequate trails and camping for recreation. I support the most minimum level of logging and the restoration of JSF to old growth with the main emphasis on education,wildlife and plant habitat,scientific study, and recreation.

2 I have reviewed the DEIR and do not believe that it adequately deals with the potential effects of the DMP. One example being herbicide use that accompanies logging.The environmental effects of herbicide use are very serious and are not mitigated in the DEIR. As stated, Ft. Bragg gets the majority of its water supply from runoff from JSF. This water will not be safe to drink. In a county of already extremely high cancer rates this will be disasterous.Mammals,birds,reptiles, amphibians,insects,plants ,fungi will be harmed or possibly exterminated. The same will happen to streams and spawning grounds. Even firewood will be contaminated and give off toxins when burned. This county has repeatedly shown it's opposition to herbicide use. This proposal is not only a great detriment to the environment but is against the will of the majority of citizens in this area.

1 In general,the alternatives in the DEIR are not adequate nor does the DEIR give adequate analysis and information on the potential effects of the choices.

The DMP cannot be implimented without extreme harm to the environment and the communities surrounding JSF. I have hiked,biked,rode horseback,collected mushrooms,and studied plants and animals in JSF for 30 years and have seen the damage done by logging. There has been large scale destruction of habitat as well as huge areas made totally inaccessible to recreation. The effects of this logging lasts many years and in some cases, where endangered species are concerned, it may last forever. I have been in JSF areas where mushrooms were abundent (e.g. Mushroom Corner), and now many years after the areas were logged, the mushrooms have not returned. Furthermore, it has become dangerous to eat wild berries, edible plants and fungi due to continued herbicide use.

3 In 1998 a Citizens Advisory Committee recommended an end to clearcutting and herbicide spraying in JSF. The fact that the DMP does not use the word clearcut does not mean that clearcutting is not included.This DMP is against the CAC recommendation and the will of the majority of the people, as evidenced in public meetings and in voting on related issues.

I propose an alternative of no clearcutting even in small patches of 1/4 acre,the cutting of only a very minimal amount of board feet in a small designated area,no herbicide use, no cutting of old second growth stands,low impact recreation,and restoring JSF to old growth.

Sincerely,
Bette Goldfarb
Bette Goldfarb

cc:Gov.Gray Davis
Sen.Wes Chesbro
Assemblywoman Virginia Strom-Martin
County Supervisor Patti Campbell

JUL 12 2002

Letter BG-114

Response to Comment 114.1
Please refer to General Response 1.

Response to Comment 114.2 and 114.3

Please refer to Response EC-37.4.

RD-125

July 6, 2002

Christopher P. Rowney
Demonstration State Forest Program Manager
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

Re: Jackson State Forest Draft EIR

Dear Mr. Rowney,

1 We have a copy of the Draft Environmental Impact Report for the Jackson State Forest. It appears the Plan is constructed in a way that prevents the average citizen from evaluating its usefulness to the economy of the State, or to the dwindling environmental resources of this State. These are our comments on the Draft EIR.

2 While Jackson State Forest was initially created to demonstrate timber growth and harvest methods, the current EIR is without consideration of a plan to shift this old use of the forest in a direction consistent with present needs of the surrounding communities and the State as a whole. In this regard, we believe there is a greater need for recreational use, and when timber harvest are needed they should be sized to allow small local timber operators and mills to participate. Current management plans are fabricated to allow only the largest timber companies to bid. We also believe funds generated by timber sales should be spent within Jackson State Forest for restoration of the trees lost and trails removed or destroyed. We oppose the plan's clearcutting, large-scale commercial logging, cutting of the oldest second-growth stands, inadequate stream protection, and herbicide use. We want Jackson State gradually restored to a redwood forest for habitat, recreation, education and research with limited logging.

3 We are neighbors and recreational users of the State Forest. With respect to the EIR treatment of harvest operations adjoining forest neighbors we find there is no clear description of proposed administrative procedures for consulting with neighbors, no quantitative minimums or ranges for buffer size, and no types of allowable harvest operations nor allowable percentages of single-tree tree removal within buffer zones, or

4 provisions for protecting recreation values. As recreational users we find the Draft Management Plan contains no recreation plan. Protection for existing campgrounds and trails is not discussed in meaningful detail. Development of a recreation plan is deferred. No baseline data is presented on potentials for hiking, biking, and equestrian trails or campsite development. No information is given on public desires for different types of recreation. The last recreational use survey way conducted in 1988. Given the high potential recreational values in the Forest, the lack of a recreation plan is a major defect. The lack of a plan makes impossible informed decision making and public participation in planning for recreation.

5 The Draft Management Plan lists only the 16 miles of trails "managed, maintained, and sanctioned" by the State Forest. No inventory has been made of the trails "that have been developed by users without participation of the Forest." These "user developed"

5 trails are an important aspect of recreation in the forest and should be considered in the EIR. No protection for recreation trails is specified in the Management Plan or EIR. In recent years, several trails, including the Bob Woods Trail and Trestle Trail have been negatively impacted by timber operations. We believe part of any contract for timber harvest should include commitment to trail restoration after harvest. A 300 foot buffer is specified around campgrounds and day-use areas. Within the buffer, logging activities will be restricted in as-yet-unspecified manner "with the site use in mind." (Draft EIR, Volume 1, p.90.) Three hundred feet is a short distance. It can be walked in less than one-minute. The proposed buffer would not protect recreation values around campsites.

6 The Draft EIR fails to evaluate a restoration alternative we favor. The closest alternative, Alternative E, does not restrict timber operations to those needed to restore the forest. It does little to enhance recreation opportunities or improve wildlife and botanical habitats, nor does it direct proceeds from timber harvests be spent within Jackson State. This EIR does not present data on the cumulative impacts of past and proposed logging operations. Its stream protection measures are not justified scientifically. For all of the above reasons, the Draft EIR fails to provide us with information and analysis we need to be able to judge merits of the Draft Management Plan.

7 We ask for an Advisory Committee to the Forest, appointments of representatives of affected State and local governments, non-governmental and recreation organizations, the general public and neighbors of the Forest. This Advisory committee should pass on management policies and plans for the Forest.

Thank you for your attention.

Sincerely,

Ray Duff Loraine Duff

Ray and Loraine Duff
P.O. Box 46
Caspar, CA 95420

Cc: Wes Chesbro
Virginia Strom-Martin

Letter RD-125

Response to Comment 125.1
Please refer to General Response 1. The DEIR is a comprehensive document that analyzes the array of management plans that could result in potential impacts of the all-inclusive DFMP. Every attempt was made to thoroughly cover the potential implications of the DFMP and to convey the findings to the average citizen.

Response to Comment 125.2
Please refer to General Response 1.

Response to Comment 125.3
The writer states that the DEIR has no clear description of proposed administrative procedures for consulting with neighbors regarding quantitative minimums or ranges in buffer size for adjacent timber harvest operations. Specified setback zones are discussed in the Land Use and Planning Section of the DEIR (Section 11.2 Regulatory Framework, page 382). The Local Coastal Program (LCP) requires a 200-foot setback distance from residential areas adjacent to Timberland Production Zones, such as JDSF. The DFMP states that a 200-foot zone will be established for designated residential areas that are adjacent to JDSF, which will comprise a total of approximately 1,153 acres (DFMP page 147). The 200-foot zone is analyzed as originating on the State Forest property.

Response to Comment 125.4-6
Please refer to General Response 1.

Response to Comment 125.7
The DFMP does not establish a formal mechanism by which comments from the Citizens Advisory Committee may be heard. Input from concerned citizens regarding future CEQA review for individual projects will continue to be received by CDF. The State Forest Advisory Committee may provide an additional means of input for citizens (DFMP, p. 62). The Committee provides overview and assists in the identification and prioritization of research and demonstration projects. The Committee is appointed by and serves at the pleasure of the Director of CDF and provides a source of council on specific issues brought to the Committee by the Director or staff on behalf of the Director. The Committee represents the entire State Forest system, with individual members of the Committee representing specific State Forests.

July 10, 2002

FC-127

Mark Hide, C.D.F.
P.O. Box 944246
Sacramento, Ca. 94244

Greetings Sir:

I believe Option "D" option management would provide, not only preservation, but also the best all around beneficial use, for the redwood forests and timber resources of Mendocino County.

I urge that option "D" be selected as a model for the implementation of use for this important and valuable resource.

Sincerely,
Fred G. Crampton
1475 Baechtel Rd. #K3
Willits, Ca. 95490

Letter FC-127

Response to Comment 127.1
Please refer to General Response 1.

JH-128

Christopher P. Rowney,
Demonstration State Forest Program Manager
California Department of Forestry & Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460.

RECEIVED
JUL 15 2002

James Harrington
318 N Whipple
Fort Bragg, CA
95437

Comment : Draft EIR, JDSF

1 The DEIR offers six alternatives. The preferred alternative is a maximum sustained yield approach which use the Forest Practice Rules, FPR, for its land management rules. Tethering the draft land management plan to the FPR is based on a management policy to administer the Jackson Demonstration State Forest, JDSF, as a single purpose, commercial, market driven tree farm. However since tree farms do not work in this region it is likely to be sold for development once such failure is demonstrated by the use and employment of the land management policies embodied in the Draft Land Management Plan, DLMP. This is the "demonstration" which is presently underway and will be continue incident to the proposed alternative. Two major corporate private holders have already demonstrated that tree farms do not succeed here and have sold their holdings. These enterprises were likewise operated for maximum sustained
2 yield. The DEIR fails to provide meaningful specifics explaining why the DLMP approach will succeed while the other enterprises have failed.

The DEIR does not offer an "ecosystem alternative". See Record of Decision, Six Rivers National Forest, Attached. As more fully explained therein this alternative accords primacy to the restoration and subsequent protection of public trust interests in the public resource. This means the restoration of a climax redwood forest ecosystem as was formerly the case and includes revitalizing the water courses along with endangered salmonids. The EPA listing of JDSF rivers and the Endangered Species Act, ESA, listing of its salmonids are ipso facto proof that the watersheds have been degraded by the cumulative watershed effects,CWE, of logging plans.
3 They are also demonstrate that the FPR are ineffectual to control such CWE. The DEIR document does not specify how or why, in detail, its methods will successfully reverse CWE.

The Board of Forestry, BOF, has previously managed this multi-purpose, public trust resource, which is JDSF, as a private, single purpose asset managed solely for the production of income through intensive timber harvesting. Despite this policy it is a public trust resource, including the stands and water courses, and its managers are fiduciaries whose disclosure responsibilities, according to law, are both explicit and comprehensive. See, Big River Sonata, film documentary showing public trust resources , Big River Estuary, Attached. Yet the DEIR does not explain its lack of an ecosystem alternative though the public beneficiaries are entitled by law to a
4 detailed explanation of the methods by which the proposed management plan will achieve the same results as the ecosystem approach insofar as restoration of the ecosystem which has been degraded by CWE. Notably, the CWE have occurred while the resource has been managed for maximum sustained yield.

The Caspar Creek Study, CCS, a project of the forest's managers, has resulted in state of the art recommendations by the researchers. They have discovered that the present strategies for the control of CWE are ineffective. These rely on the subjective judgment of the forester to determine if the plan will have CWE or not. If she concludes that it will then she recommends changes in the plan or adds mitigations ns to offset the CWE. If this approach is an effective one there would have been no severely diminished public trust interests in JDSF as is undeniably the case.

The insights in hydrology, geomorphology and other pertinent watershed sciences achieved by

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the CCS appear in the attached Record of Decision,ROD, Six Rivers National Forest, and Six Rivers National Forest Land Management Plan, SRNFLMP. The core of the ecosystem approach is a watershed assessment. This is a multi-disciplinary watershed specific effort to identify issues of concern within that watershed in order to design restoration and control strategies customized for that watershed. Timber harvesting is prohibited in such watersheds pending completion of the watershed assessment together with the methods for addressing the issues of concern found by the assessment. Watershed assessments are also used to identify key watersheds suitable for refugia purposes and to be administered as such.

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According to the DEIR for a JDSFLMP previous commenters have suggested a comprehensive watershed approach. The response to the suggestion is;

"This alternative would require multiple landowners to participate and agree to management direction over the long term. The feasibility of such a mutually acceptable agreement is remote because adjoining public and private ownerships have differing management objectives.....likelihood of increased impacts associated with more intense off-site activities resulting from a mitigation bank on JDSF." Pg. 60 DEIR JDSF.

This is a striking admission considering that the Caspar Creek researchers recommend control of CWE by limiting the amount of land logged over time in a watershed. This is termed an "activity based threshold". The FPRs do no such thing. Rather they leave it to the subjective judgment of the landowner's agent, the forester, to first identify potential impacts with cumulative effect potential and then devise "remediations". No one knows how much timber is being removed from a watershed during a given time period because the FPRs do not require such a data base. See Cumulative Watershed Effects, Caspar Creek and Beyond, Reid, pg. 124. The authors of the DEIR are here conceding that the FPRs are designed to oversee extensive, market driven, industrial logging operations and are not designed to restore and maintain watershed integrity and balance through control of CWE. If the FPR were also designed to control CWE all the various holders would not have to mutually agree to control CWE. Instead the FPR themselves would require that all Timber Harvest Plans comply with the rules for that watershed designed by a multi-disciplinary team to address the issues of concern highlighted by the watershed assessment. This admission is the crux of the issue of whether this document complies with the California Environmental Quality Act. It is a clear admission that the favored alternative is management of the forest with the same goals and purposes as an industrial, single purpose forest operation. It lacks an ecosystem alternative and uses the very same FPR as govern single purpose, maximum sustained yield operations. The BOF fiduciaries have chosen to retain the anachronistic FPR as well as to specifically employ them in their governance of the public resource for which they are management trustees.

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"..the feasibility of such a mutually acceptable agreement is remote..." and **" ..this alternative was eliminated....due to technical infeasibility."**

This is an obfuscation. So long as the FPR do not require the other holders in the watershed to follow modern forest science methods for control of CWE the only option is their voluntary acquiescence. The response to the comment makes it seem as if the commenter should have known better than to suggest an unworkable alternative. But it seem far more likely that the commenter was suggesting that the FPR be changed to a watershed approach to provide protection for water quality and fisheries. After all the BOF has control over both the design of the FPR and the DLMP. And while private holders may own the land they do not own the waters and fisheries except as public trust beneficiaries with the rest of us. What's more the Mono Lake Cases hold that no one can acquire a vested interest resulting in the impairment of public trust interests. This means they could not legally object to changes in FPR for the purpose of controlling CWE. Put in plain terms the ecosystem approach is not technically infeasible. The Six Rivers Plan Land Management Plan is a technically feasible implementation of an ecosystem approach alternative. Six Rivers Plan Land Management Plan, Attached. Rather the ecosystem alternative is legally infeasible because the Forest Practice Rules do not implement the recommendations of scientists for control of cumulative watershed effects in this region. Report to the Legislature, Cumulative Watershed Impacts, Dr. Leslie Reid, Attached.

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The CCS has presented the managers with state of the art strategies for the restoration and control of CWE as well as the technically researched reasons that prior strategies have not been successful.

Present Strategies:

Impact Thresholds: These are considered from the viewpoint of the resource impacted. These have been found to have limited utility in a world of delayed, downstream effects and unpredictable storm events. That is to say since the responses from the impacted resource lag behind the land use activities which cause them the trend of change may be irreversible by the time the threshold is surpassed. Cumulative Watershed Effects: Caspar Creek and Beyond, Reid Pg. 124, Attached.

10 Details supporting this conclusion are given at page 124 in the Reid paper, id. The DEIR does not explain in detail the specific impact thresholds to be used by the managers, the watersheds to which they will apply nor in what manner they are not subject to the above criticism. The DEIR states that "selected" watershed will be monitored for impacts resulting from THPs. Then THP requirements may be designed to address these impacts or concerns. This is to vague for meaningful comment, except to say that it is too vague. Even if it were specific the methodology is unworkable. By the time the impacts are measured it is likely that the effects will be irreversible. Reid, id, pg. 124.

Mitigation: Research has disclosed that mitigation measures are not effective in controlling CWE. Reid, id, Pg. 123, Attached. For example mitigation does not presently require that all future impacts from a plan and associated roads be repaired as part of the plan. Instead mitigation measures are taken to offset the effects of future plans.

Riparian Reserves: See below.

The Caspar Creek Study, CCS, has been performed within the boundaries of JDSF The research has addressed the issues of CWE. The findings have been that the FPR do not solve sediment deposits in banks, in pools and in the form of bed aggradation. Nor do they effectively address subsequent bank erosion and downstream migration of sediment, flooding due to raised beds, summer low flows, soil productivity thresholds, loss of canopy, gullying, unstable slopes and loss of woody debris. Because the research has revealed the dynamics of these processes the scientists have been able to devise and test corrective measures including effective use of
11 agencies in multi-disciplinary efforts. See Report to the Legislature, Cumulative Watershed Impacts, Dr. Leslie Reid. Public input on the issue of rewriting the FPR to implement these measures has been squelched by considering them as given in the report. But they must be publicly discussed because the FPR as written will inevitably take down the watersheds. Moreover this discussion, because of the research and recommendations cited can and should ascend to the level of peer review once the DEIR is redrawn and resubmitted as it must be to comply with the California Environmental Quality Act, CEQA.

Caspar Creek Study Preferred Strategies:

1. Sediment Effects: A key strategy is the use of Activity Based Thresholds. This places a limiting value on the total area logged in the watershed during a specified time period. Cumulative Watershed Effects, Caspar Creek and Beyond, Reid, Pg. 124. A watershed should be in a state of equilibrium by means of self limitation. The instances of canopy loss are limited because the means by which trees can be naturally removed is limited by natural constraints. Beavers cannot fell sequoia semper virens. At least not any genetically unmodified species. But economic systems are not self limiting. This is why they experience horrific oscillations and tend to crash from time to time. It is crystal clear that the BOF is agent of the economic system in this context and is functionally blind to threats to the public trust interests in a balanced ecosystem without which these interests evaporate with the irreversible disequilibration of the
12 redwood forest climax ecosystem. If the BOF were percipient there would be an ecosystem

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12 approach alternative in this document and it would be the preferred alternative. See Record of Decision, Six Rivers National Forest. Attached.

13 2. Channel Changes from Altered Woody Regime. The strategy recommended by the Caspar Creek research is Impact Based Best Management Practices. In this case use of Riparian Reserves. However riparian reserves are not in themselves sufficient to reverse the trend of aquatic habitat degradation. They must be combined with watershed analysis to identify the causes of problems, restoration programs to reverse the causes and speed recovery, as well as careful protection of key watersheds to insure that watershed-scale refugia are present. Reid, Cumulative Watershed Effects, Caspar Creek and Beyond, Reid, Pg. 124, 125. Thus the FPR require amendment to include a requirement for watershed assessments as well as identification of key watersheds to be used as refugia. A thorough discussion of recommended methods for control of CWE is contained in Cumulative Watershed Effects, Caspar Creek and Beyond, Reid, attached

A respect for the equilibrium of watershed dynamics has been matured in the comprehension of CCS researchers. Their findings penetrate to the heart of issues of sediment transport, canopy loss, unstable slopes, soil productivity as well as the extended time dimension in which these processes play themselves out. See Comment Letter re PalCo SYP/HCP, Robert F. Curry PhD, Attached. Until managers have at least a rudimentary grasp of the discernible signatures of balanced ecosystems as well as the indicia of those in disequilibrium they have to rely on what they do know. Unfortunately the BOF only knows about maximum sustained yield, profit driven logging operations but has not learned the basics of watershed hydrology and geomorphology. This is why an ecosystem approach is nowhere to be found in their DEIR, nor in the FPR themselves.

This document contains a gross misrepresentation of the findings of forest scientists apparently to rationalize the argument that public trust values are adequately protected by the draft land m management plan. The following statement put forth by the BOF is designed to lull the public trust beneficiaries into a belief that in spite of the scheduled clear cutting, envisioned in the millions of board feet, the watershed in JDSF will not continue to be degraded.

"As much of the increased sediment load was related to increased storm flow volumes those increases are expected to be short lived as the Forest grows back". DEIR pg. 368,369.

14 There is no detail given. Is the statement contemplating clearest which will regenerate and thereby cause sediment loss to stop. How can this be? Following the clearcut it will take years before the seedlings become mature tree with full canopy and root systems. But since the policy is maximum sustained yield the same stands will immediately clearcut again. What about existing sediment deposits in the form of bed aggradement and stream bank deposits? The following is an excerpt from Comment Letter by Dr. Curry on the DEIR for PalCo SYP/HCP addressing similar sediment issues.

"1. The proposed cutting schedule, with highly accelerated initial cutting (34,903 acres of clearcut out of 54,382 acres harvested in the first decade (27 percent of the PalCo holdings) will have very significant hydrologic impact that directly affects salmonids and other species. Completely unaddressed are the issues of the effects of such a cut schedule on effective precipitation (rainfall that reaches the ground where it may become runoff). Professional colleague Dr. Leslie Reid in her response to the PalCo SYP/HCP will address this issue in more detail.

15 **"Interception losses occur when rainfall is evaporated from vegetation. Foresters often cite evapotranspiration as the causes of decreased runoff from a well-forested subwatershed as compared with one recently cut over or partly deforested. But measuring total evapotranspiration from a forest is virtually impossible. Interception losses are easily measured by simply measuring rainfall under a tree canopy and comparing it to that outside the canopy. Recent work (see cites by Leslie Reid) demonstrate that 30 to 50 percent of storm precipitation may be intercepted in high-rainfall high-intensity storm sites. When a forest canopy is removed in any significant proportion, the "leaf area index" decreases and interception losses also therefore decrease. This happens even in cold wet climates because air near the ground or even near a water surface is not completely saturated (100% humidity). An air mass at 90% humidity can still hold the equivalent of**

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15 **several inches more precipitation if there is a large surface area to intercept and evaporate it. Forest cutting reduces the leaf area index by orders of magnitude. This effect has been measured on PalCo lands in an older Master's thesis effort at Humboldt State University.**

"According to Dr. Reid's analysis (personal communication) the effect of a modest and conservative 22 percent increase in effective precipitation results in about a doubling of flood frequency for mean annual winter floods and as much as a 250% increase in landslide volumes moving into watercourses. When such an effect is coupled with the compounding effects of increased sediment yield and resulting increases in stream aggradation as noted by Harvey Kelsey for sites below the PalCo holdings, and as noted in the data collected for Freshwater Creek for the comparative channel cross section surveys of 1975 and 1998, we end up with a combined effect for the first decade of 4-times the frequency of floods of any given magnitude below PalCo ownership in Freshwater Creek. The sedimentation effects that reduce cross-sectional area will
16 **persist much longer than the timber harvest effects. These sedimentation effects are largely gravel pool fillings, thus reducing habitat independent of fine-grained sediment yield that is the focus of the PalCo HCP effort. In landslide-prone terrain, the increased coarse sediment yield that results from the increased soil moisture and increased depth of saturation associated with the combined effect of decreased interception losses and decreased evapotranspiration all combine to compound the downstream, offsite cumulative effects of timber harvest as outlined in the PalCo document. Where is the analysis? How have the already-disequilibrated streams like Freshwater been factored into the SYP/HCP? Why are more new roads proposed for this already most over-roaded watershed? This is a prime example of the failure of the PalCo document to address hydrologic effects, whether obvious, like fog drip, or more subtle, such as increased flooding.** " Curry, id, Pgs.. 7,8, Attached.

While the HCP involved a different North Coast watershed both instances contain similar complex hydrological and geomorphological considerations. A firm grasp of the essential basics of the dynamics of sediment entrainment and deposition is a complex study. The BOF is or should be aware of the complexity since much of the research of cumulative watershed
17 effects, such as sediment transport has been done in the Caspar Creek Study located in JDSF itself. That research has not determined that the regrowth incident to maximum sustained yield land management results in no net sediment increases beyond natural baselines. The assertion that regrowth halts excess sediment transport in spite of ongoing massive clear cutting is a misrepresentation calculated to mislead the public into believing that the DLMP will result in restoration of salmonid habitat and water quality insofar as it has been degraded by excessive sediment transport.

Another serious misrepresentation in the DEIR states that riparian areas will entrap sediment transported by runoff from roads and upslope logging sites.

"Equipment limitation zones and no cut buffer zones adjacent to watercourses will enhance protection from sediment deliver to watercourses," DEIR Pg. 4.

The BOF is representing that this function of riparian buffers is a scientific fact. There is no citation of expert opinion in support. Nor is there any discussion of the persuasive expert findings to the contrary:

18 **"But the proposed evaluation and establishment of thresholds seem to be based on the same faith or inherent unsupported belief system that those riparian streamside vegetative buffers or limited entry areas will somehow filter out the sediments that are being transported through them. As pointed out in my PalCo SYP/HCP review, there is neither physical on-the-ground evidence of such an imaginary effect of buffer strips (sometimes actually called filter strips by CDF), nor is there any after-the-fact sediment accumulation that would have to occur if such an effect did protect watercourses.** " Letter Comment re DEIR for PalCo SYP/HCP, Curry, Pg. 2.

As a fiduciary the BOF has a high duty to employ experts to furnish advice and opinions regarding the protection of trust resources and to fully disclose issues about protection of trust resources to the beneficiaries. There is nothing in the DEIR which details the research and findings which support the assertion that stream buffers act as sediment traps.

Forest Inventory Management

5

19 Modern forest inventory management tools are the core of maximum sustained yield management. The primary tool is forest inventory and land management software. The plot data is data based according to generally accepted measurement methods and can be input from handhelds if desired. Ground proofing is simple because screen displays and reports quickly provide the data for the plot to be field verified. The DEIR does not provide meaningful details describing the inventory software used by the managers nor the manner and method of public access to the forest inventory database for ground truthing by the public. There is no detail describing the manner of audit of the inventory nor where and how the public can peruse the audits. This is a credibility gap of titanic proportions by managers gearing up to cut 31 million board feet per annum from out public forest. A functional description of a modern forest inventory application is attached. Assisi Forest Inventory Product Description, Attached.

Ecosystem Services and Externalized Costs

CEQA Guidelines, Sec. 15124, states that the Project Description should include a project's economic characteristics. DEIR pg. 37. The DEIR includes the cutting goal of 30 plus million bf per annum, timber prices, associated tax revenues and a brief analysis of recreational values in old growth forests. But there are externalized costs resulting from the extensive clear cutting as well. These costs are losses suffered by the ecosystem services provided by the resource. In order to quantify losses of these ecosystem services assets, the assets themselves have to be quantified for a baseline value. These assets include recreational services of hunting, fishing, camping, boating, swimming, photography and aesthetic enjoyment. Other assets are water filtration, replenishment of watertables, streams and acquifers, carbon sequestration, nutrient recycling, economically valuable plants, fish and wildlife. Still others are soil production and flood control.

20 The DEIR lacks quantification of the ecosystem services of JDSF. This is no doubt because the BOF has no records and does not know how many people recreate in the project, how much fresh water the watersheds formerly supplied, totals of fish counts, numbers of flooding incidence, wildlife survey totals water table levels and acquifer status for examples.

21 Especially important these days is the lack of quantification of the value of the water resources in the project. To the extent that the forest is hydrologically functional it provides water filtration lessening the expense of filtration for drinking water. To the extent that the forest replenishes acquifers and water tables it provides water itself. To the extent that its canopies intercept fog it furnishes additional water.

22 Securing the data enabling quantification of the value of ecosystem services is the province of the resource economist. This expertise also quantifies the losses associated with degradations of ecosystem services These losses result from water pollution, lost recreational opportunities, lost scenic opportunities, diminished aesthetic values, diminished carbon sequestration, diminished flood control, diminished soil production, diminished nutrient cycling and losses of economically valuable wildlife, fish and plant species. Once resource econometric methods quantify these losses the externalized costs of the project are clear. Since the report does not include these externalized costs , neither the fiduciary and nor the beneficial owners can calculate all the actual costs associated with the project and thus reliably calculate whether the project will result in a net benefit or a net loss.

The CEQA does not require the public trust beneficiaries to speculate on the economic consequences of the project instead it requires the project managers, the BOF fiduciaries in this case, to research all the costs of the project in sufficient detail to permit meaningful and creative comment.

The Water Budget Further Details

23 **"The hydrologic input of fog water to the redwood forests ecosystem is extremely high. When the fog collector data was compared to the data obtained from fog-drip collectors beneath trees it was**

clear that the trees were a full 19-40% more effective at `stripping' fog water out of the air mass. Moreover, between 20-50% of all the moisture input to the study site was due to the redwood trees themselves. These results suggest two things. First, that the hydrology and therefrom the ecology of redwood forests is intimately linked to the presence of the tree canopies themselves and the role they play in stripping fog, ameliorating the forest microclimate, and increasing the total annual income of water. Secondly, and, perhaps most importantly, from a management perspective, is the fact that loss of redwood trees due to natural disasters (e.g., fire, windthrow, or floods) or from logging or other land use practices which convert the forests to open habitats will dramatically alter the hydrological and ecological balance of these forests (see Bruijnzeel 1991). Loss of the canopy tree, S. sempervirens, therefore, would mean not only the loss of the biomass, nutrients within the biomass, and the soils (by post-disturbance erosion), by also a fundamental
23 conversion of a once moist, cool, forested ecosystem into a more drought prone, and warmer ecosystem. Plants which depend upon the moisture input from fog drip, as well as the other microclimatic benefits of living in the forest, would certainly experience more frequent water stress because of lower water input and higher heat and evaporative conditions. It is also possible that both redwood seedlings and understory plants species which require forest conditions to regenerate including fog drip and cooler temperatures could disappear if the integrity of the redwood forests is disrupted." The Use Of Fog Precipitation By Plants In Coastal Redwood Forests, Todd E. Dawson, Cornell University.

The foregoing quotation describes a debit in the water budget incident to canopy loss which will be substantial resulting from the clear cutting agenda of the preferred alternative. Neither the DEIR nor the DLMP expertly quantifies this debit as linked to the 30 million plus board feet per annum to be extracted. This is water value which will be debited for many years and which there is no conceivable mitigation. What will be the monetary losses from lowered water tables?
24 How much must be estimated for redrilling dry wells? What will be the estimated economic consequences of salt water intrusion into affected aequifers? What are projected losses of income from salmonid extinctions which affect offshore fisheries, commercial and recreational? The resource accounting will have to assume the worst case scenario because there is no provision in the DEIR and the DLMP for watershed assessments.

An ecosystem approach alternative will reduce or eliminate the externalized costs of logging. JDSF has been heavily logged for decades but the externalized costs have never been quantified. The present degraded condition of its watersheds will improve with a no logging alternative. In turn, over time, the quantified value of the ecosystem services will increase. A CEQA project accounting for the logging alternative and the no logging alternative will disclose the
25 approach with the greater net benefit provide that the accounting also calculates trend lines. That is the logging alternative over time may follow a curve in which the ratio of externalized costs to benefits is increasing while the no logging alternative will follow a curve with the same ratio decreasing because the value of ecosystem services increases as the watersheds are restored. A condition which will not obtain incident to the logging alternative which has resulted in the current degraded condition.

James Harrington
dated: 11/12/02

Attached:

Report to the Legislature, Cumulative Watershed Impacts, Dr. Leslie Reid
Cumulative Watershed Effects, Caspar Creek and Beyond, Reid
Comment Letter re DEIR PalCo SYP/HCP, Robert R. Curry PhD
Assisi Forest Inventory Product Description
Six Rivers National Forest Record of Decision
Six Rivers National Forest Land Management Plan
Big River Sonata

CC: Hon Virginia Strom-Martin
Hon Wes Chesbro

7

Letter JH-128

Response to Comment 128.1
The JDSF Management Plan does not solely rely on the Forest Practice Rules for protecting terrestrial and aquatic habitats. The prescriptions in the Plan for both types of habitats are tailored to the requirements identified in previous assessment work completed on JDSF and provide protection measures and restoration practices considerably beyond those specified in the FPRs.

Response to Comment 128.2
Please see General Response 1 and 2. It is speculative that the proposed DFMP will not succeed. There is no requirement that analysis in the DEIR include comparison of proposed actions to non-relevant projects.

Response to Comment 128.3
Please see General Response 9. Cumulative watershed effects are addressed in a programmatic manner for the DEIR but not on a project-by-project basis. This landscape level document does not include the specific measures that will be prescribed for individual projects following a careful site-specific investigation.

Response to Comment 128.4
The DEIR contains five alternatives that represent the range of alternatives required to permit a reasoned choice. The DEIR need not consider every conceivable alternative to a proposed project. Please see General Response 2.

Response to Comment 128.5
A watershed assessment was completed for JDSF and a summary of the results were incorporated into the JDSF Management Plan (see pages 19 to 23). The commenter describes the federal government's watershed analysis approach and methodologies—but this is only one method for completing watershed assessment work. Please see General Response 2.

Response to Comment 128.6
The commenter describes an "activity based threshold" for controlling cumulative watershed effects, or a limitation on the amount of land logged over time in a given watershed. He states that the FPRs do not allow for this approach. Actually, the FPRs provide a considerable amount of flexibility in what can and cannot occur depending on the level of activity and types of activities determined to be appropriate for protecting lives, property, and public trust resources. Examples of where activity based thresholds have been utilized are the Freshwater Creek and Elk River watersheds located in Humboldt County, where CDF has limited the amount of logging activity that can occur in these watersheds in a given year. The watershed assessment work that has been completed for JDSF did not reveal that this type of prescription was necessary for protection and restoration of public trust resources found in JDSF watersheds—but it does not mean that it could not have been employed here if it had been determined to be necessary.

Response to Comment 128.7
The prescriptions included in the JDSF Management Plan and DEIR go beyond Rule requirements and were developed to meet the requirements found to exist in the watersheds draining JDSF.

Response to Comment 128.8
See response to comment JH-128.3

Response to Comment 128.9
See response to comment JH-128.4

Response to Comment 128.10
Thresholds of significance are identified in the DEIR for each specific resource analyzed and contained in Section VII. As an example, the thresholds of significance identified for hydrology and water quality are found on pages 374-375.

Response to Comment 128.11
The commenter has not correctly portrayed the results of the Caspar Creek watershed study. In actuality, this study has found that: 1) the modern FPRs have substantially reduced water quality impacts, 2) the South Fork (logged without the modern Rules) produced 2.4 to 3.7 times more sediment when compared to North Fork (logged under the modern Rules), 3) the South Fork logging and roading produced numerous landslides related to roads, skid trails and landings, 4) in the North Fork, the number and size of landslides were similar in logged and unlogged units, 5) in the North Fork, there was little or no evidence of sediment impacts to macroinvertebrate communities, 6) North Fork logging resulted in a 50% increase in short-term LWD loading, which doubled pool volumes, 7) increased water yields and summer low flows were documented after timber harvesting in both the North and South Forks, 8) changes in streamflow and flooding resulting from clear cutting approximately half the North Fork were relatively minor and did not appear to substantially modify channel morphology, and 9) variability was high, but no dramatic changes in the abundance of coho salmon or steelhead trout were recorded after the North Fork logging—which was completed with clearcut silviculture (Lewis 1998, Cafferata and Spittler 1998, Bottorff and Knight 1996, Nakamoto 1998, Lewis et al. 2001, Lisle 1999, Ziemer 1998, Lisle and Napolitano 1998, Keppeler 1998).

Response to Comment 128.12
See response to comment JH-128.4

Response to Comment 128.13
The commenter is describing the federal process for watershed analysis (REO 1995). This approach was adopted as part of the President's Forest Plan for federal lands in the Pacific Northwest within the range of the northern spotted owl. This methodology does not result in watershed specific prescriptions. One of the barriers to effectively applying the federal watershed analysis approach is the difficulty of evaluating risk (Ice 2001). With the federal

approach, riparian reserves were designed to provide a high level of certainty for protection of riparian functions under all conditions—which means that protection is conservative much of the time.

Response to Comment 128.14
The commenter states that the DEIR contains the following statement without sufficient explanation: "As much of the increased sediment load was related to increased storm flow volumes, those increases are expected to be short lived as the Forest grows back." As stated in Lewis (1998) and Ziemer (1998), it is reasonable to have increased sediment yield related to increased streamflow during storms because increased storm flows in logged watersheds provide additional energy to deliver and transport sediment downstream. Peak flow increases in the North Fork recovered to pre-logging levels in 11 years; the recovery rate was approximately 9% per year after logging for the clearcut tributary watersheds (J. Lewis, USFS-PSW, Arcata, CA, personal communication). Annual sediment loads increased an average of 212% in the clearcut tributaries (Lewis et al. 2001) following logging, and have recovered to approximately 50% after 10 years (J. Lewis, personal communication). Therefore, it is reasonable to conclude that much of the sediment increase was related to flow increases.

Response to Comment 128.15
The commenter cites Dr. Curry's comment letter on the DEIR for PALCO's SYP / HCP addressing sediment issues. Dr. Curry cites Dr. Leslie Reid's work citing interception losses of 30 to 50% of storm precipitation for high rainfall intensity storm sites. Recent work in the Caspar Creek watershed has shown that average rainfall interception loss is about 20% of gross winter rainfall; and during large high intensity storms, rainfall interception is about 18% (Lewis at al. 2001). Differences in interception loss between logged and unlogged areas probably explain most of the observed increases in larger winter peak flows, when transpiration is at its minimum.

Response to Comment 128.16
Dr. Curry's comments on PALCO's Freshwater Creek watershed–in terms of channel aggradation, landsliding rates, and resulting increases in flood frequency do not directly translate to JDSF. The geologic composition, landslide type and frequency, and existing channel conditions, etc. of the Freshwater Creek basin are considerably different than those found in Caspar Creek and the other drainages located within the boundaries of JDSF. Therefore, conclusions drawn for the Freshwater Creek basin cannot be extrapolated for JDSF.

Response to Comment 128.17
The commenter states that research has not determined that the regrowth incident to maximum sustained yield land management results in no net sediment increases beyond natural baselines. Research conducted in the North Fork Caspar Creek watershed puts this issue in proper perspective. In this basin, nearly half the watershed was clearcut over a 3 year period—an intensity that greatly exceeds what is proposed for similarly sized basins throughout JDSF as proposed in the JDSF Management Plan. Annual sediment loads increased an average of 212% in the clearcut tributaries (Lewis et al. 2001) following logging, and have recovered to approximately 50% after 10 years (J. Lewis, personal communication). Impacts to the

downstream beneficial uses of water have been very minimal. For example, in the North Fork there was little or no evidence of sediment impacts to macroinvertebrate communities (Bottorff and Knight 1996). Additionally, variability was high, but no dramatic changes in the abundance of coho salmon or steelhead trout were recorded after the North Fork logging—which was completed with clearcut silviculture (Nakamota 1998). Therefore, even though there will be short-term increases in sediment yield associated with the proposed management, it is likely that these increases will small and not have significant adverse impacts to the downstream beneficial uses of water present. In addition, it is expected that the implementation of the practices prescribed in the JDSF Road Management Plan (part of the overall JDSF Management Plan) will reduce adverse impacts to aquatic habitats that support anadromous fish, amphibians, and other aquatic organisms. Implementation of the Road Management Plan as well as correction of existing erosion problems located on or near THP sites will partially compensate for sediment generated from future proposed logging operations. In the short-term (i.e., first decade), it is anticipated that these improvements will fully compensate for logging generated sediment.

Response to Comment 128.18
The commenter states that another serious misrepresentation in the DEIR is that riparian areas will entrap sediment transported by runoff from roads and upslope logging units. Clearly, there are two types of sediment moving through buffer strips that must be considered here—sediment moving as overland flow (or sheet flow) and sediment moving through buffer strips as channelized flow. Buffer strips do not filter sediment that moves through as channelized flow. Brown (1985) reported that buffer strip effectiveness is not determined solely by containment of overland flow because sediment often moves through buffer strips as channelized flow. For overland flow, however, several studies have reported on the success of buffer strip filtration of sediment. For example, Haupt (1959) found that filter strips of 200-300 feet below roads are generally effective in controlling sediment that is not channelized. Belt and O'Laughlin (1994) report that key factors controlling sediment movement within buffer strips are infiltration rate, slope, and density of obstructions. Research suggests that to control sediment, buffer strips should be wider where infiltration rates are low or slopes within riparian areas are steep. CH_2MHill and Western Watershed Analysts (1999) reviewed the literature regarding sediment filtration and found that most of the data show filtration approaching 100% near 150 feet from the stream for sediment originating from diffuse sources (as opposed to concentrated sources such as ditch relief culverts). They suggest that the degree of ground surface roughness is generally more important than distance in determining the amount of sediment filtration.

The Rapid Sediment Budget presented in the DFMP and DEIR estimated road-related sediment accounted for approximately 74% of the sediment delivered to streams. The goal of the Road Management Plan is to "enhance stream channel conditions…by reducing both fine and coarse sediment loading," and to "improve water quality by reducing suspended sediment concentrations and turbidity." Approximately 19% of sediment delivered resulted from hillslope landsliding (non road-related), surface erosion, and soil creep with the remaining 7% from instream storage.

Vegetated stream buffers are intended to trap overland sheet flow that may carry sediment toward watercourses. They are not intended to trap road-related sediment that is carried in channelized flow such as that found in inboard ditches, diversions down roads or debris slides from perched fills. That is the goal of the Road Management Plan. However, riparian vegetation and downed wood can reduce the amount of sediment delivered from upland areas in several ways. By providing physical barriers, standing or downed vegetation can trap sediments moving overland during rainfall events (Spence et al. 1996). Riparian vegetation also reduces the likelihood of mass failures by virtue of root strength. The CDF Monitoring Study Group (MSG 1999) conducted a field review of 150 THPs and reported erosion events originating from current THPs and encountered on mid-zone or streambank WLPZ transects were found to be rare.

Response to Comment 128.19
The software used to work up JDSF inventory data is standard, off-the-shelf commercial software. JDSF's inventory data has been available to the public in electronic form in its entirety for many years. CDF welcomes public input into the inventory process and data analysis.

Response to Comment 128.20
The commenter asserts that the BOF/CDF has no records and does not know how many people recreate in the project, how much fresh water the watersheds formerly supplied, totals of fish counts, numbers of flooding incidence, wildlife survey totals, water table levels, and aquifer status, for example. Actually, many of these items have been quantified. The JDSF Management Plan states that the past 10 year period has averaged 16,000 overnight-use days per year, with the total number of visitor-use days exceeding this by an estimated factor of three when day-use visitors are included. Annual runoff for both the North and South Fork Caspar Creek weirs from 1963 to 2000 is available online at the USFS-PSW's website for Caspar Creek. Fish count data is available for the Noyo River Egg Taking Station operated by the Department of Fish and Game. Flooding incidence is available from the USGS gauging station on the Noyo River as well as the gauging stations at the North and South Fork weirs operated since water year 1963. Wildlife survey data is available for numerous species, including northern spotted owls. Water table levels are available through pieziometric data collected for several sites in the North Fork of Caspar Creek.

Response to Comment 128.21
The commenter states that it is important to have a quantification of the value of the water resources in the project. Along with Redwood Creek in Humboldt County, Caspar Creek provides the finest data in the state regarding watershed processes and how forest management affects them. Publishable data is available for runoff, sediment yield, interception loss, evapotranspiration, fog drip, subsurface flow, bedload yield, etc. Much of what has been learned in Caspar Creek can be applied to the western and central portions of JDSF.

Response to Comment 128.22
pg 6, paragraph 5: The commenter requests a detailed accounting of the value of ecosystem services. While the term 'ecosystem services' is used in resource economics, there is no agreed upon standard for quantifying them and some well funded attempts by the United Nations and

the World Bank have been cancelled after concluding that a singular methodology and accounting system was not feasible. One agreed-upon aspect is that any accounting system must logically apply to all goods and services from all units. For example the zoning of Forest 'X' as a preserve may marginally increase some type of ecosystem service such as a wildlife habitat that requires 100% shade AND it will also create a MARGINAL DECREASE in the exact same ecosystem service in some other forest such as Forest 'Y' if that forest must produce the ecosystem goods that no longer come from Forest 'X'. Since California already imports 75% of the wood products we use in the state, there is little need to demonstrate that we can further shift the State's ecosystem goods imbalance at the probable expense of some other state or nations ecosystem services account. The only way to get a global improvement is to have ecologically sustainable joint production systems of both goods and services in many places.

A fundamental tenet of the demonstration forest is that it is possible to produce recreational opportunities, watershed protection, and timber from the same property. As the commenter noted, the EIR does include quantitative information on recreation use number (albeit for the whole state forest rather than only in 'old growth forests'). The recreational patterns on JDSF appear similar to those for National Forests in California. For example, the recently published National Visitor Use Monitoring (NVUM) studies for the National Forests in California point out that only 3% of total recreational use occurs in designated wilderness areas and that most users require some type of recreational infrastructure such as trails, campgrounds, picnic areas, boat launches, and roads for 2 wheel drive vehicles. As the EIR noted, JDSF does provide these types of facilities and does experience considerable recreational use. Regarding the other ecosystem services noted the commenter, the physical data in the EIR demonstrate high levels of these ecosystem services (carbon sequestration from growing biomass inventories, nutrient cycling within stands of different ecological characteristics, wildlife habitats, etc.) managed across the forest as a whole.

Response to Comment 128.23

The commenter provides a long citation from Dr. Dawson regarding the hydrologic input of fog water to redwood forest ecosystems. Dr. Dawson states in this quotation that the loss of redwood trees will dramatically alter the hydrological and ecological balance of these forests. While it very likely true regarding changes to the ecological balance, data collected in the Caspar Creek watershed does not support the contention that overall watershed hydrology will be significantly altered. Keppeler (1998) reported that fog plays an important role in regional ecology by moderating evapotranspiration, but Caspar Creek data indicates that any possible post-logging loss of fog drip does not result in a net reduction in streamflow. Moisture savings due to reduced evapotranspiration appear to override fog precipitation losses here. After conducting a detailed study in Caspar Creek on fog drip in 1998 through 2000, Keppeler (written communication) concluded that: 1) fog drip makes a highly variable, but generally minor, contribution to total annual precipitation at Caspar Creek, 2) following timber harvest, streamflow increases due to reduced interception and evapotranspiration exceed diminishment due to the loss of fog drip, and 3) although hydrologically insignificant, fog drip may be important ecologically on a site-specific basis.

Response to Comment 128.24
The commenter refers to the debit in the water budget incident to canopy loss that will result from clear cutting proposed in the preferred agenda. As stated above in No. 23 and in Keppeler (1998), clear cutting will actually increase water yields and summer low flows—not cause a deficit. After logging, reduced evapotranspiration allows for additional water to be stored and routed to streams as summer streamflow.

Fog drip as an unaccounted part of annual precipitation has been a subject of controversy. Shultz (1990) states that coastal fog drip can be as much as 10 to 20 percent of annual precipitation. Given that fog is a summer weather pattern, this could amount up to 2 to 4 inches in San Francisco and 4 to 8 inches in Eureka, California. Hewlett (1969) contends that "measurements are few and the subject of fog precipitation is colored by propaganda that favors the role of trees in producing more water than they consumptively use." Specifically for Caspar Creek on JDSF, Keppeler (1998) addressed fog drip by saying that "fog plays an important role in the regional ecology by moderating evapotranspiration. However, Caspar Creek data indicate that any possible post-logging loss of fog drip did not result in a net reduction in streamflow. Moisture savings due to reduced evapotranspiration appear to override any fog precipitation losses at this site."

Keppeler reported that enhanced soil moisture in the rooting zone followed timber harvest in North Fork clearcut units. Previously intermittent stream reaches and soil pipes became perennial. The larger increases in minimum flows observed in the North Fork were probably due to wetter soils in the clearcut units where minimal vegetation existed to use this enhanced moisture.

Response to Comment 128.25
The commenter states that the present degraded condition of watersheds in JDSF will improve with a no logging alternative. Actually, with this alternative road maintenance would be limited to that necessary to maintain public access. No active management would occur to reduce fire risks. Implementation of the Road Management Plan would not occur, doing away with the inventory, upgrade work, and abandonment components. Overall, this alternative would result in sedimentation impacts through deterioration and continued use of existing roads without an active upgrading program. This alternative would not have suspended sediment associated with timber harvesting, but could have more sediment yield from roads due to a less aggressive road management program.

IS-133

Ivan Samuels
1114 SW 7th Ave. #8
Gainesville, FL 32601

Christopher Rowney
P.O. Box 944246
Sacramento, CA 94244-2460

Dear Mr. Rowney:

I am writing to provide final comments regarding the Draft Environmental Impact Report (DEIR) for the Jackson Demonstration State Forest Management Plan (DFMP). My concerns are as follows:

1 1) I do not believe that clear-cutting is a sustainable forest management/timber harvest technique. Demonstrations of this highly destructive method are not justified, and set a bad example for other public and private timber harvest operations.

2 2) The CDF should continue to place high priority on identification and preservation of existing old growth forest stands, and the forests that immediately surround them. When small numbers of old growth trees are located, a large buffer zone of younger growth trees near these old growth stands should be protected. No trees should be left as islands in a logged matrix.

3 3) The CDF should not construct new roads within the JDSF. Instead, roads that are intended for demonstration timber harvest projects should be improved, and old roads removed and restored to forest, or closed off. Attempts should be made to restrict ORV access to all such roads.

4 4) Finally, a minimum amount of timber harvest activity should take place in the southern portion of the JDSF. The recent acquisition of the Big River Conservation Area combined with the Russian Gulch and Mendocino Woodlands State Parks makes the southern section of the JDSF a large piece of contiguous forest. Lands in the southern area of the JDSF connect these parcels, and their preservation is important to allow movement of animals between protected areas.

Thank you for taking the time to review these comments, and for extending the public comment period.

Sincerely,

Ivan Samuels

Letter IS-133

Response to Comments 133.1
Please refer to General Response 1 and 8.

Response to Comments 133.2
The DEIR completed an assessment of the DFMP old growth management standards and found that no significant environmental effects would occur to the old growth resource. Also, please refer to General Responses 2 and 4.

Response to Comment 133.3

The following Road Management Plan objectives have been designed to improve JDSF's road system, as well as eliminate potential significant impacts (page 102 of the DEIR):

- The total mileage of roads will be minimized through basin-wide planning.
- Existing roads will be used wherever appropriate, in preference to building new roads. Substandard roads with drainage and sediment production problems will be reconstructed, re-graded, re-aligned, resurfaced, or otherwise treated to prevent sediment delivery to watercourses, or they will be abandoned properly.
- Roads that are not in good condition will be properly abandoned.
- New roads will be designed to the minimum width necessary to safely accommodate required traffic, with turnouts spaced appropriately for the road class (as per the guidelines in the California Forest Practice Rules). All roads will be classified according to expected use (high, medium, or light) and maintained accordingly.

The Road Management Plan contains provisions for development of new roads in currently unroaded areas, which is necessary for some future timber harvest plans. All roads will be built in conformance with state of the art road building techniques and theories, such as stipulations on slope and location of roads. Also, please refer to General Response 1 and 2. The DFMP includes a road management plan that will minimize impacts of roads in JDSF.

Response to Comment 133.4
The DFMP does not include any of the area between Russian Gulch State Park, the Mendocino Woodlands STA and the recently acquired Big River area in the short-term harvest schedule. There is one planned harvest in the Woodlands STA. The limited amount of proposed harvest should maintain the connectivity of the parcels. Please refer to Response VT-241.27 for further details.

AG-138

July 11, 2002

Dear Mr. Rowney:

I am unable to address specific points of the draft EIR for Jackson Demonstration State Forest. I do have a general concern, however, that this forest, like all forests, be managed for the health and beauty of the forest and for its value as wildlife habitat and erosion control. Any cutting of timber must be done on a highly selective basis and any old growth or nesting sights must be spared. Moreover, there should be a buffer left around any nesting sights to prevent habitat disturbance. Streamside growth should not be disturbed. Please work to restore all forests to a healthy condition.

Sincerely yours, Anna Greenleaf

A. Greenleaf
860 W. 5th St., #312
San Pedro, CA
90731

RECEIVED
JUL 15 2002
BY: ~~Mr.~~ Christopher Rowney
Calif. Dept. of Forestry + Fire Protection
State Forest Program
Post Office Box 944246
Sacramento, California 94244-2460

01

Letter AG-138

Response to Comment 138.1
Please refer to General Response 1.

TJ-139

Chris Rowney, Deputy Chief for State Forests
CDF
PO Box 944246
Sacramento, CA 94244

Tom Johnsen
407 West Mill Street
Ukiah, CA 95482

Thursday, July 11, 2002

Mr. Rowney,

1 Save Jackson State Forest. Do not log it.

I do not know why e-mail or faxes are not acceptable to you for public comment. Our government officials seem to accept them. But the CDF doesn't in this case.

2 What is the reason for this restriction?

Is it convenience for those tallying the responses? Is it because your computers have broken down? Or is it because you want to restrict the flow of public comment on an issue already decided?

With the collapse of public trust in some of our basic institutions, from Wall street to State and Federal government, it is imperative that everyone acting on behalf of the people be clear and forthright in all their dealings. The greatest danger facing America is not terrorism, it is public trust in their government and agencies, and, more importantly, the process of governance.

Thank you,
Tom Johnsen

Tom Johnsen

Letter TJ-139

Response to Comment 139.1
Please refer to General Response 1.

Response to Comment 139.2
Please refer to General Response 3.

July 10, 2002

FC-140

Christopher Barney
P.O. Box 944246
Sacramento, Ca. 94244

repeat #127

Greetings Sir:

Option "D" appears to be by far, the most sensible and beneficial use and management as well as preservation, of the valuable redwood forests and timber resources of Mendocino County.

I fully support Option "D"

Sincerely,

Fred S. Crampton
1475 Bachtel Rd. #K3
Willits, Ca. 95490

Letter FC-140

Response to Comment 140.1
The writer advocates the adoption of Alternative D. Your comment has been noted and added to the public record. Please refer to General Response 1.

JS-146

NAPA COUNTY
SIERRA
CLUB

P.O. Box 644, Napa, CA 94559-0644

Chris Rowney
Deputy Chief for State Forests
California Department of Forestry
PO Box 944246
Sacramento, CA 94244
Re: Jackson Demonstration State Forest Management Plan

July 12, 2002

Dear Mr. Rowney,

The Management Plan should reflect the public's aspirations for the future of forest management. A fundamental change of direction should take place. The forest plan
1 should emphasize how to manage forests for the protection of native species of plants and
2 animals and to protect Mendocino's natural pristine water quality. The last shreds of
3 Mendocino County's mature forests should not be allowed to be destroyed by following the practices of the past.

The public should be encouraged to be outdoors, experiencing the glory of nature, as well as adding to economic well being and diversity of rural nearby communities. We note that outdoor recreation returns more income than timber production. A research /
4 demonstration project should be designed to compare the relative economic benefits of creating outdoor public recreation opportunities as an alternative to only the cutting of trees.

The 80 to 110 year old second growth offers us a unique opportunity for research
5 how to accelerate old growth characteristics and should be for that purpose only.

6 Stream side buffers and setbacks should be expanded to protect the streamside
7,8 habitat, create sediment retention zones, and to provide for wildlife corridors. Our
9 remaining old growth stands of Redwoods should be protected and not logged at all and
10 designated old growth groves should be expanded.

Sincerely,

John Stephens

John Stephens, Chair

JUL 15 2002

Recycled Paper

Letter JS-146 (Sierra Club, Napa County)

Response to Comments 146.1-146.3
Please refer to Response PS-2.2.

Response to Comment 146.4
Please refer to General Responses 1 and 2.

Response to Comment 146.5
Please refer to General Response 7.

Response to Comments 146.6-146.8
Please refer to Response F3.4.

Response to Comments 146.9 and 146.10
Please refer to General Responses 4 and 7.

RC-148

HORIZON FOREST PRODUCTS

P.O. Box 5325
Richmond, CA 94805
510/235-2014
fax/510/237-4918

June 20, 2002

RECEIVED
JUN 24 2002

Mr. Christopher P. Rowney, Demonstration State Forest Program Manager
California Department of Forestry & Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460.

Re: Jackson Demonstration State Forest DEIR

Horizon Forest Products appreciates the opportunity to comment on the Jackson Demonstration State Forest draft EIR. Our review of the DEIR finds that the proposed hardwood management planning is insufficient as a biological mitigation performance standard under California Environmental Quality Act §15126.4(1)(B) and is not in conformity with the Joint Policy on Hardwoods, 14 CCR 912.9(C)(4)(e) [Technical Rule Addendum #2] and 14 CCR 897.

JDSF Hardwood Management

DEIR: "Hardwoods are a minor component of stands on the west end of the Forest, averaging approximately 10 percent of the basal area. On the east end, hardwoods make up approximately 24 percent of the basal area on average....The goal is to maintain hardwood tree composition at approximately 10 percent (West End) to 15 percent (East End) of the stand basal area" (DEIR at 170/176). **Note:** The JDSF management plan states that "On the east end, hardwoods make up approximately 30 percent of the basal area on average" (Management Plan at 57). The correct east end hardwood basal area figure according to Table 3 of the JDSF Option A plan is 30 percent.

The DEIR is proposing stand hardwood retention based on whatever the post-harvest conifer basal area stocking may be; not hardwood retention based on the minimum biological needs of dependent wildlife, including numerous special-status species inhabiting JDSF and environs (DEIR at 230-259). An alternative approach consistent with CEQA would be to translate the proposed hardwood residual percentages into specific minimum basal area retention thresholds, with tree retention guidelines to direct hardwood habitat composition and structure over time.

Old-Growth Hardwoods

DEIR: "Since it is often difficult to visually distinguish between young-growth and old-growth hardwoods, size will serve as a surrogate for age. All hardwoods 36" DBH + will be considered for retention, as will other hardwoods that appear to be old-growth..." (DEIR at 172).

The >36" tree standard to delineate old-growth hardwoods is capricious, unsupported by scientific or historical evidence. As George Sudworth observed at the beginning of the 20th century, at a time when old-growth conifers were abundant, tanoak >36" dbh were rare: "A smooth-trunked tree from 50 to 75 feet high and from 1 to 2 feet in diameter; trees 80 to 85 feet, or somewhat taller, and 3 to 4 feet in diameter sometimes occur....Forest-grown trees from 14 to 18 inches in diameter are from 80 to 128 years old; trees from 20 to 60 inches in diameter are from 150 to 250 years. They doubtless obtain a greater age" (Sudworth 1908). The Forest Service reports that, "mature trees usually do not exceed 82 feet (25 m) in height and 3.2 feet (1 m) in diameter" (Tappeiner, McDonald and Roy 1990).

Biologically hardwoods >30" dbh contribute old-growth characteristics in the form of superior mast production, large cavities, roosting and nesting platforms, large snags and large downed woody debris. For example, "The tanoak acorn crop has been estimated at 1,000 pounds a year per 30 inch dbh tree... Mast production from tanoaks 18-24 inches dbh ranged from 3,900-4,600 acorns, while a 30" dbh tanoak produced almost 110,000 acorns" (Hopland 1996).

Hardwood Snags

DEIR: "Approximately 57% of the snags are conifers; the remaining 43% are hardwoods" (DEIR at 153).

3 Decadence is one of hardwoods most significant habitat attributes, yet the DEIR contains no specific retention standard for hardwood snags.

WLPZ Hardwoods

DEIR: "JDSF will maintain the naturally occurring hardwood components in riparian stands (WLPZs) and other special concern areas when consistent with the objectives of that area" (DEIR at 176).

Sudworth reported of Mendocino County tanoak, "Enters this county from north and is common throughout most of redwood forest." Tanoak was characterized as prevalent in the Willits area. Of
4 redwood forests Sudworth wrote: "Relatively small part (less than 50 square miles) of redwood forest is pure growth. Greater part (1,800 square miles) a mixture of redwood (50 to 75 percent)...Douglas fir and tanbark oak characteristic on upper slopes and hemlock on lower."

Generally, tanoak are not considered a riparian tree. As described by Sudworth tanoak in its natural setting is a species of the upper slopes. The WLPZ hardwood planning will provide many wildlife values, but the primary mast producing hardwood at JDSF is sparsely represented within the WLPZs. JDSF must have specific performance standards for maintaining hardwood biological values outside WLPZ boundaries.

Joint Policy on Hardwoods

The DEIR does not mention the Board of Forestry-Fish and Game Commission "Joint Policy on Hardwoods," of which CDF and the California Department of Fish and Game (CDFG) are signatories. At its formation in 1994 the joint hardwood policy was founded on two documents, the Interim Wildlife/Hardwood Management Guidelines and A Planner's Guide for Oak Woodlands. The application of the Interim Wildlife/Hardwood Management Guidelines to coastal timberlands was clearly stated by CDFG in December 1995 comments regarding Louisiana-Pacific's proposed Sustained Yield Plan for Mendocino County coastal forests:

"In stands where harvesting will occur, hardwood retention should be increased to 25 ft^2/ac. for most
5 stands. In stands with acknowledged higher wildlife use (e.g., deer holding areas, wintering habitat, migration corridors, raptor nesting and foraging habitat, etc.), hardwood retention should be increased to 35 ft^2/ac. These levels are consistent with the Department's Interim Wildlife/Hardwood Management Guidelines."

Notably, the DEIR profile of Columbian black-tailed deer neglects to mention the critical role tanoak mast provide for JDSF's resident deer (DEIR at 225). Detailed studies have conclusively shown that tanoak mast represents the primary food source for JDSF deer from late-fall through late winter (Browning and Lauppe 1964). The Hopland proceedings reported that, "The importance of oaks for deer is well documented. It is evident that hardwood cutting losses due to timber operations can impose negative effects on deer populations."

Summary

JDSF's mandate includes the practical demonstration of new methods of sustainable timberland management and educational efforts to maintain wildlife habitats. A major impediment to MSP in the Coast District is recapturing conifer site productivity from tanoak, while maintaining important tanoak habitat attributes. To rectify the current hardwood management deficiencies in the DEIR and demonstrate sustainable management practices the following JDSF management protocols for hardwoods are

recommended for the preferred alternative. These recommendations provide for the minimum hardwood composition and structure necessary to sustain JDSF's resident wildlife species. Note that the protocols apply to individual planning watersheds, not stands. This will provide implementation flexibility, particularly in watersheds where even-aged management is applied.

Recommended Hardwood Management:
On timberland containing hardwoods the west end currently averages approximately 38 sq. ft. of hardwood basal area per acre and the east end approximately 58 sq. ft. of hardwood basal area per acre. It is recommended that both the west and east ends of JDSF maintain a minimum average of 30 sq. ft. of hardwood basal area per acre in each planning watershed. The desired hardwood condition for each planning watershed is to have at least 65 percent of the total hardwood basal area in trees greater than 18" dbh. The following tree retention criteria should be used to guide hardwood composition and structure for all JDSF planning watersheds:

6

All hardwood trees >30" dbh shall be retained following timber harvest and site preparation.

Emphasize retention of hardwood trees >18" dbh.

Emphasize retention of an average of one hardwood snag per acre >18" dbh.

Emphasize retention of hardwood concentrations on upper slopes.

Respectfully,

Ron Cowan

Ron Cowan

Literature Cited

Browning, Bruce M.; Lauppe, Earl. M. 1964. **A deer study in redwood-Douglas fir forest type.** California Department of Fish and Game, Sacramento, CA. 15 pages.

Merenlender, Adina M.; Standiford, Richard B.; Giusti, Gregory A., editors 1996. **Committee Report: Hardwood retention for north coast California timberlands; northern Sonoma, Mendocino, southwest Trinity, and southern Humboldt counties.** Published by the Integrated Hardwood Range Management Program, University of California, Berkeley. pp. 6; 20.

Sudworth, George B. 1908. **Forest trees of the Pacific slope.** United States Forest Service, Government Printing Office, Washington D.C. pp. 147; 321.

Tappeiner, John C.; McDonald, Philip M.; Roy, Douglass F. 1990. **Lithocarpus densiflorus (Hook. & Arn.) Rehd., Tanoak.** In: Burns, Russel M; Honkala, Barbara, H., technical coordinators. Silvics of North America: Volume 2. Hardwoods. Agric. Handb. 654. Washington DC: U.S. Department of Agriculture; pp. 417-425.

Letter RC-148

Response to Comment 148.1
This comment relates to the method proposed in the DFMP and analyzed in the DEIR regarding hardwood retention standards. The DFMP and DEIR both discuss that the goal for hardwood retention levels for JDSF are approximately 10% on the west end, and 15% on the east end, of the total stand basal area. The comment suggests that these basal area standards instead be converted into specific minimum basal area retention thresholds. Please also refer to General Response 2.

The proposed retention standards comply with 14 CCR 912.9 (C)(4)(e) where "***Hardwood cover can be estimated using the basal area per acre provided by hardwoods of all species,"*** as the basal area for hardwoods can be obtained by applying the retention percentages toward the total stand basal area. The goal for the retention levels is based on the natural level of occurrence of hardwoods within the stands of JDSF. As described on page 170 of the DEIR, ***" In areas of the Forest with an overabundance of hardwoods,"*** (largely due to results from previous logging entries) "***an emphasis has been to restore the stands to a conifer-dominated condition***." These proposed hardwood retention levels provide for the biological needs of dependant wildlife.

Response to Comment 148.2
This comment takes exception to the method of determining which hardwood trees would be considered old growth and considered for retention. The DFMP provides for, and the DEIR analyzed the methodology of determining which hardwoods would be considered as old growth and designated for retention. Pages 171 and 172 of the DEIR contain the methodology and standards. In addition to the 36-inch DBH+ standard, there are other factors applied (a-f), and any hardwoods that appear to be old growth will determine which hardwoods will be retained. This approach was considered adequate for old-growth hardwood retention. Please also refer to General Response 2.

Response to Comment 148.3
The DEIR contains discussion on existing snag levels on pages 218-220 and desired snag levels with retention and mitigation to achieve the desired goal on pages 264 and 265. This discussion includes hardwood species within the retention standards.

Response to Comment 148.4
The DFMP and DEIR both discuss that the goal for hardwood retention levels for JDSF are approximately 10% on the west end, and 15% on the east end, of the total stand basal area. The goal for the retention levels is based on the natural level of occurrence of hardwoods within the stands of JDSF. Retention levels that include areas outside WLPZ boundaries and account for maintaining biological values are applied across the Forest.

Response to Comment 148
Please refer to Response RC-148.4.

Response to Comment 148.6
Please refer to General Response 1.

WE-150

15 July 2002

Chris Rowney, Deputy Chief for State Forests
California Department of Forestry
PO Box 944246
Sacramento, CA 94244

re: Draft Management Plan & EIR for Jackson State Forest

The Draft Management Plan has many crucial missing elements:

1 taking biomass out of a system impoverishes it - where is the analysis of nutrient accounting (including losses of soil nutrients to erosion) and what is being done to replace all the biomass that has been taken and is projected to be taken? (note that biomass does not just include carbon and nitrogen which may be acquired from air, but also numerous other vitamins and nutrients such as magnesium which is at the heart of the chlorophyll molecule and without which not many plants can grow);

soil ecology is the foundation of the forest ecosystem and contains keystone species without which the entire system would collapse; any assessment is utterly inadequate if it does not contain a full analysis of the impact on soil ecology, which will take a long time to do anything other than scratch the surface since thousands of species are involved;

2 stream protection measures for Salmon and other threatened species that are based on the precautionary principle - ie significantly beyond what is known to be needed by the current (inadequate) state of scientific knowledge, to provide a substantial margin of safety for their survival;

all activities must be conditional on the actual and projected health of the ecosystem and in particular its threatened members - if at any time their actual or projected health declines then any activities that could be contributing must be stopped immediately and remedial measures taken;

3 complete cessation of herbicide use, and comprehensive assessment of the damage past herbicide use has done to soil ecology, amphibians, and fish;

use of fire instead of logging;

4 cumulative impacts of past and proposed logging, including impacts on a wide spectrum of mycorrhizal and other types of fungi (which are crucial to long-term viability of forests), soil bacteria, nematodes, arthropods, as well as aquatic species;

5 restoration of old growth, of which vanishingly small amounts are left;

expansion of habitat for recovery of Marbled Murrelets;

all revenues from timber harvests should go to ecological restoration.

The Draft EIR fails to present sufficient information to assess the adequacy of the Management Plan.

- 1 -

The priorities for a public forest should be ecological values, habitat, education, research, recreation, and above all sustainability.

Your allegiance must be to the greater public interest, to the health of the Earth, and to the future human and nonhuman generations who will have to deal with the consequences long after these timber companies have gone bankrupt and are no longer able to provide your boss with political contributions.

Loggers must post a bond sufficient to cover all costs of restoration of habitat to its original condition of health, so they can't cause a lot of damage then just declare bankruptcy and run away. For endangered species habitat, the bond must in addition cover the cost of replacing the species, which can be expected to take a million years of evolution. Thus the amount for this portion of the bond would be all the annual costs of maintaining habitat in prime condition plus an annual compensation for loss of the species (including non-economic losses), multiplied by a million.
5 The EIR must calculate this amount.

All revenues from extraction of natural resources shall be held in escrow until replacement of the natural resources is confirmed. In the case of trees, this would take a minimum of decades. In the case of old-growth, this would take a minimum of centuries. Loggers are fond of saying there's nothing wrong with their practices, it will all grow back. Ok, let them put their money where their mouth is. If it does grow back, then they'll get paid. If it doesn't, they're the ones who should take the loss, not future generations that have to live with the consequences. Interest from the escrow accounts could be used to fund restoration of past damage.

Salmon can teach us what it means to be committed and responsible to home and community. They stake their lives on the integrity of one watershed. If Salmon are in trouble, something is seriously wrong with the watershed. Denuding hillsides kills fish by burying their habitat in sediment and baking them from lack of shade.

Only 1% of Coho Salmon now survive. Translated to human beings, this 99% loss would mean the death of 5.9 billion people, a thousand times the number of Jews killed in Nazi concentration camps.

Murder is a far more serious crime than stealing, since money is easily replaced, while murder is irrevocable. Genocide of a nation is a far more serious crime than murder, since a life can be replaced in one generation, while extermination is irrevocable. Extinction of a species is a far more serious crime than extermination of a nation, since a nation can be replaced in centuries, while extinction is irrevocable.

In other words, the subject here is not minor political tradeoffs, but crimes against Creation of high degree.

Redwoods can live as long as 70 generations of people. People will be affected by loss of old growth forest for this amount of time, possibly much longer if damage is done, such as loss of topsoil. This is the minimum time frame for thinking about these issues. If for round numbers we figure a

- 2 -

constant population, 20 years per generation, and 70 years per lifetime, then the total number of people living in that time is 20 times the number living now. Thus if we are to have democracy for all - one person one vote - then all people today combined have at most 5% (1/20th) of the vote, while future generations have at least 95% (19/20ths). This would also apply to calculating economic benefits. If endangered species are lost, then the timeframe of consequences changes to a million years.

I call on you to bring an end to the era when government catered to the interest of short-sighted profiteers. Restore integrity to our public institutions by standing up for the value of life.

6 It is illegitimate to prohibit email or fax comments, as that violates the whole purpose of the public comment process which is to facilitate public participation.

Here are some more points on biomass and soil inadequately addressed by the EIR.

Dead trees (snags) are the life of the forest because they house many more creatures than live ones.

The Forest Service acknowledges that "Wildlife and fish need dead, hollow, or fallen trees for food and family homes. Nationwide over 149 species of birds, 73 species of mammals, 93 species of amphibians and reptiles, and nearly all fish use downed trees for food, nesting, or shelter. Only 31 bird species can make their own nest cavities in trees. Another 54 species of birds and other animals also use these holes."

Rotting logs are critical to the survival of Salamanders.

The total biomass of the Red Backed Salamander may equal or exceed that of birds and mammals in hardwood forests. Decreased leaf litter, removal of coarse woody debris, exposure to full sunlight, and the resulting decrease in ground level humidity can be detrimental to these important vertebrates.

Juvenile salmonid abundance is often directly related to the amount of large woody debris in a stream.
Woody debris in upstream reaches routes sediment and organic debris; the loss of large woody debris in these upstream reaches may result in excessive sediment transport into salmonid habitat.

Overland sediment movement is inversely proportional to obstructions (downed vegetation) on the hillside.

Coarse woody debris (snags, fallen logs, large branches) plays a key role in soil stability, nutrient cycling, moisture retention, and habitat. Coarse woody debris that falls across the hill slope acts as a barrier and traps soil along the uphill side. Plants in turn take root and act to further stabilize this new soil. Logs on the forest floor act like a slow release vitamin supplement, making nutrients available for new plant growth. Leaves and plant material falling from the canopy, along with nutrients captured in rain, accumulate on the fallen logs and are held until another living organism captures them. Bacteria work to decompose a

fallen log while producing nitrogen. The decaying log is also an important source of moisture. Even when the surrounding soil and duff are dry, the sponge-like decaying log will be moist and can support seedlings.

Accumulations of debris in a stream creates gradual steps, gravel bars and pools. These are important structural elements which both disperse stream energy and create fish habitat. They also provide a key nutrient source by allowing up to 70% of the litterfall to be retained and decomposed by stream organisms.

One of the best sources is the book The Hidden Forest: biography of an ecosystem, by Jon Luoma, which describes the results of research at Andrews Experimental Forest and the Long-Term Ecological Research Program (US Forest Service). Here are some excerpts.

Virtually everybody believed rotting logs were trash - wood fiber that had gone to waste. In retrospect, it's incredible that we could have been that stupid. The tree that's green and standing up is the one they should have called 'dead'. The tree down on the ground is the one that's _really_ alive. Only about 5% of a live tree might be living cells, but as much as 20% of the weight of a rotting log can be living tissue. Termite guts are filled with nitrogen-fixing bacteria.

Logs play an especially significant role when the forest must rebound from disturbances. We came to believe that logs were the focus of recovery in the forest. Old-growth forests are resilient in ways that younger forests are not. Logs are supersponges. They can accumulate enormous volumes of water and can retain it even after an intense fire at the peak of a summer drought. In one acre they measured 219 tons of down logs plus 47 tons of standing snags.

A lot of people have assumed that there's always enough nutrients in the deep layers of the soil to take care of trees forever. But now we're coming around to the general conclusion that the vast percentage of nutrients that exist in the forest ecosystem are in fact recycled - that the roots that go down deeply are mainly going down to tap water sources. But it's the soils at the top, those that are almost entirely biological in origin, that contain most of the nutrients used by the system.

Researchers determined that virtually all of the nutrients that entered the forest remained bound up in the ecosystem, continually recycled and retained by living plants and animals. After the researchers had one of the valleys clear-cut, nutrients promptly began to surge out of the stream that drained the valley: nitrate loss alone increased sixtyfold.

Logs in the stream played far more important ecological roles than anyone previously imagined. In a stream where woody debris has been neatly cleared away, banks and bottoms tend to be uniform and well graded. Log-choked waters offer far more complex structure with pools and riffles. Currents are slowed dramatically, dropping their sediments to the stream floor and dissipating their energy, thus reducing their ability to erode stream banks. Logs slow down the flow of nutrients so they can be consumed by small invertebrates that form the animal base of stream food-webs. The EIR must assess these factors.

- 4 -

7 Geomorphic change is decades of boredom punctuated by hours of chaos when a really big storm hits. During those hours, more sediment and other changes occured to the landscape than occurred in the previous 3 decades. These major events are rare enough that a researcher may not witness one in his entire career. The EIR must assess these factors.

There was a dramatic difference between watersheds logged & not. Within 5 years peak flows increased 50%, as long as 25 years later flows were 25-40% higher, logging as little as 5% of some watersheds could increase peak flows by 10-55%. They think the mechanism is the roads transmitting the water, not simply the cutting.

In the moist soils of old-growth forests, Andrews entomologists discovered an astonishing diversity that now appears to rival that of tropical ecosystems. Andrews researchers counted some 3500 species of arthropods in the forest soil but believe that is less than half of the estimated 8,000 species that inhabit Andrews, most of them in the soil. In contrast, they have counted a grand total of 143 species of mammals, birds, reptiles, and amphibians at the site.

Insect communities of the forest are so finely tuned to their environment that they serve as a sort of precision barometer: a knowledgeable entomologist might, simply by analyzing the species of tiny organisms in a handful of soil, describe in astonishing detail the ecosystem above.

There are "keystone bugs" in the soil so critical to survival of the forest ecosystem that if they vanish the ecosystem might collapse.

Mycologists believe that mycorrhizal fungi effectively connect trees with as much as 1,000 times more soil area than the roots themselves.
A single gram of forest soil may contain several miles of fungal hyphae.
As they pump water and mineral nutrients to the roots, the fungi form a sort of protective armor against disease bacteria around the roots, and sometimes actually innoculate the soil with antibiotics that kill disease bacteria.
Some trees can thrive on acidic mine slag heaps if they have enough fungi-mediated defenses against the acids in the soil.
Mycorrhizal fungi are keys to how a damaged ecosystem heals.

40% of photosynthate made by leaves of trees does not feed the plant at all but rather seeps out of the roots to feed mycorrhizal fungi and the rest of the ecosystem surrounding the roots.

Some mycorrhizal fungi can dissolve stones and pump the minerals into the ecosystem. Their density plummets after a clearcut, and the missing mineralization of rock and freeing nutrients in humic matter may explain why some replanted forests are unable to thrive.
A forty-acre site was leveled by loggers in 1968. It has been replanted with new seedlings four times, but most of the new seedlings died each time they were planted. 3 years after replanting some seedlings the usual way and some seedlings innoculated with soil from healthy forest, only the inoculated ones had survived.

Root zone fungi and bacteria exude glues (polysaccharides) that bind soil

- 5 -

particles together, resulting in better retention and movement of air and water. Mycorrhizal fungi break down nitrogen into forms that can be used by plants, and chelate iron which is needed by trees. Mats of fungi in the soil store nutrients that otherwise would be likely to dissolve and leach away. Mycorrhizal fungi provide a bridge connecting trees, allowing shaded ones to borrow photosynthate from overstory trees, even of different species.

In Japan and Europe some forests are in profound decline. The problems have been blamed on pollution, but Trappe wonders if it is more because these soils have not had their input of woody debris, and associated development of the right fungal balance.
The Management Plan must guarantee this does not happen at Jackson.

I'm used to thinking that the purpose of soil is to feed plants, but who knows, maybe as far as Nature is concerned the soil is where it's at, and plants are appendages whose purpose is to feed the soil.

We think of defoliator insects as pests, but we're learning that they can play extremely critical roles in the health of the forest. Even when they defoliate part of a tree and kill a branch, or when they kill whole trees, they often do it for a good ecological reason. We're learning that they're better managers of the forest than we are.
Defoliators that successfully devour needles on the lowest most shaded branches of a growing Douglas-fir actually serve to prune branch and needle systems that are draining more resources from the tree than their weak photosynthetic capacity is returning. The fact that defoliators strip away the lower branches that could serve as fuel ladders for fire to move into the high canopy is one of the reasons old-growth Douglas-firs are so fire-tolerant.
The apparent scourge of defoliating spruce budworms that raged through the driest, low-lying forests on the east side of the Cascade Range between 1987 and 1992 could be seen not as a disaster but as an ecosystem trying to tell us something. Fire had been suppressed in this naturally fire-prone ecosystem for years. By the late 1980s, trees that had been replanted after logging, many of them Douglas-firs poorly suited to these drier soils, were competing fiercely for limited water. The budworms were merely killing the least hardy trees. The budworms were seen as the problem. But if you really look at it, they were the solution to the problem.

The Long-Term Ecological Research Program has lots of publications and a website at www.fsl.orst.edu/lterhome.html

Walter Epp
281 Jayne #71
Oakland, CA 94610

- 6 -

Letter WE-150

Response to Comment 150.1
Please refer to General Response 2.

Response to Comment 150.2
Please refer to General Response 1.

Response to Comment 150.3
Please refer to Response EC-37.4 and General Response 2.

Response to Comment 150.4
Please refer to General Responses 2 and 9.

Response to Comment 150.5
Please refer to General Response 2.

Response to Comment 150.6
Please refer to General Response 3.

Response to Comment 150.7
Please refer to General Responses 2 and 9.

PH-151

FORESTS FOREVER

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July 15, 2002

Christopher Rowney
Deputy Chief for State Forests
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, California 942444

Dear Mr. Rowney:

On behalf of Forests Forever and its roughly 30,000 active contributors in Northern California I am writing to express our strong opposition to the Draft Management Plan, now in its public comment period, for Jackson Demonstration State Forest. This plan and its DEIR are inadequate in numerous respects.

On a general level, we would not favor any restoration alternative covered by the DEIR. Alternative E, which comes closest to acceptable, far and away emphasizes commercial timber production above any other use of the forest.

Instead, any logging at Jackson should be conducted with an aim to restoring the forest to old-growth-approximating conditions, to enhancing recreation opportunties, and otherwise boosting the forest's potential for public use, wildlife habitat, education and research. Contrary to the requirements of CEQA, the DEIR does not evaluate the cumulative effects of future and past logging operations. Provisions to protect streams from the impacts of timber extraction bear no relation to the latest widely accepted science. The role Jackson could play in recovery of the listed Marbled murrelet—through provision of critical habitat-- is not addressed.

Forests Forever's special role in the Jackson debate has been to educate the public on the threat to Jackson from continued CDF logging operations, as well as on Jackson's enormous unrealized potential as a public and environmen-

Restore • Reinhabit • Re-enchant

tal resource. In the course of our efforts, and somewhat to our surprise, we have found it necessary to take a step back and first make the public aware of the existence of Jackson Forest. *A chief reason the public has never heard of its largest state forest is, we believe, that CDF has sought over the year's to keep a low profile for this area.* CDF has regarded Jackson Forest primarily as a source of cash to finance programs, many of which benefit private timber operations through direct or indirect subsidy, as well as pay for activities on other state forests.

We have seen California road maps with a blank spot where Jackson should be shown. This bit of evidence of Jackson's public invisibility only serves to accent the far-greater weight of our conversations with many thousands of Californians in recent months who never heard of Jackson and are shocked to learn of its use as an underregulated timber-revenue generator for CDF. The public expressions we have seen are overwhelmingly in favor of changing the mission of Jackson from logging to restoration.

More specifically we offer the following numbered points on the DEIR. We request a written response to each one:

1. Although it points out that there are no federal forests in the redwood region where demonstrations and experiments may be conducted, the DEIR fails to consider other aspects of this lack of other public forestland. *Jackson is the only large public forest in the redwood region north of San Francisco and south of Humboldt County.* Much of the area adjacent to and nearby Jackson is owned by the timber industry, which has logged all the old growth and almost all of the older second-growth redwood forest. As industry lands are private property, the public has no ready access to them.

2

2. Jackson plays an important role in protecting the biological resources and recreation potential of the region. Given how badly the timber industry has decimated the region's forests, *it would be appropriate to manage Jackson as a demonstration of various ways to restore logged lands to old-growth conditions.* The DEIR does not seem to have seriously considered this alternative.

If you choose not to pursue the option of restoring ancient forest-approximating conditions, however, you should revise the proposed FMP in the following ways:

a) *All old-growth trees should be protected* unless they pose a serious threat to human life.

3

b) *All old-growth trees should have a no-logging buffer surrounding them.* Where there are many scattered old-growth trees they should be aggregated into a special concern area that is managed for late-succession development. For example the area along West Chamberlain Creek should be included in the special concern area already designated for the Eric Swanson Memorial Grove (the Waterfall Grove).

Old-growth trees are a non-renewable resource and their removal is a significant adverse effect that has not been identified in the DEIR.

3. The *Marbled murrelets* known to be nesting at Russian Gulch State Park adjacent to

page three

Jackson must receive strong protection because they are listed under both the state and federal Endangered Species Acts (ESAs). *Both branches of the headwaters of Russian Gulch must be set aside in a no-logging zone.* The DEIR has failed to properly identify the proposed logging adjacent to this nesting site as a significant adverse impact to a listed species.

4. *The recommendations of the federal recovery plan for Marbled murrelets should be implemented.* Along with careful protection for areas known to be occupied by murrelets, *suitable nesting habitat should be protected where it exists.* Murrelet experts should evaluate the old second growth near the South Fork of Hare Creek for suitability along with other areas they determine to have potential for murrelet habitat. Doing this is well within Jackson's demonstration mandate. Jackson encompasses about 30 percent of the Critical Habitat designated in California for Marbled murrelets. CDF has a duty to conserve listed species under the California ESA. Failing to implement feasible conservation activities such as implementing the federal recovery plan is a violation of CESA that has not been identified by the DEIR.

4

5. *The 80- to 110-year-old second growth should not be logged.* Although there is a lot of discussion regarding late-succession forest, the DEIR has failed to disclose that the FMP proposes to log most of the oldest second-growth stands currently growing. A comparison of the Forest Vegetation Map with the Special Concern Areas map shows this to be true even though the text of the DEIR does not disclose this significant negative impact.

The DEIR claims the Plan intends to develop late-succession forest stands as soon as possible but does not explain how logging the oldest second-growth stands would accomplish that.

5

The timber industry has eliminated most old second-growth redwood from its holdings. Jackson is a public forest that must give as much consideration to *recreation and aesthetics* as it does to logging. To protect the beauty of the forest and its recreation potential, none of the old 80- to 110-year-old second-growth stands should be logged.

Specifically, this would include all the older second growth near Camp One and Brandon Gulch. A small buffer to the campground is insufficient. People want to hike around the forest, and not just stay within the campground. *Any sort of logging in high-use public areas is an aesthetic impact that has not been identified in the DEIR.*

This impact is not limited to even-aged management as the DEIR mistakenly indicates it is.

6. *Clearcutting, even with "variable retention," should be eliminated.* The public is not likely to make a significant distinction between clearcutting, which is supposed to not happen under the new FMP, and "variable retention" cuts, which are clearcuts with a few clumps of trees retained. Regardless of clearcutting's (dubious) value as a logging method, the public does not want all the trees stripped off a succession of 20- to 30-acre blocks in its only regional redwood forest. The timber industry is demonstrating clearcutting in a massive way and our public forest does not need to add more stripped acreage. Jackson already has huge tracts of clearcut land that can accommodate any experimental needs that may arise. The DEIR has failed to identify variable retention logging as a significant adverse impact on aesthetic and recreation

6

resources.

7 7. *Poor logging practices should be eliminated.* Jackson has a very significant invasive plant problem that is incompletely described in the DEIR. Pampas grass and other similar pest plant invasions are directly proportional to the amount of forest canopy that is removed from a stand in a single operation. *The DEIR fails to disclose this.* Even-aged logging, particularly clearcuts (by any name), are highly likely to precipitate additional infestations of exotic plant species. *The DEIR fails to disclose this significant adverse impact from certain types of logging operations.*

8 8. *Herbicide use should be avoided.* The perceived need for herbicide use is directly proportional to the extent of invasive plant infestations and native brush growth that occurs after too much of the forest canopy is removed in a single operation. The DEIR fails to disclose the connection between logging and herbicide use. Herbicide use should be eliminated by avoiding timber operations that result in invasive plant problems. Existing invasive infestations should be controlled using non-chemical means.

9 9. *Stream protection should be increased.* The proposed stream buffers are not as protective as the recommendations of the National Marine Fisheries Service and the U.S. Forest Service for this region. The Forest Service Standards and Guidelines are most appropriate for implementation at Jackson because they were designed for protection of many species, not only fish. The DEIR has failed to disclose that the federal aquatic protection measures would be a reasonable and feasible strategy for implementation at Jackson.

10 10. *Slash piles should be reduced across the forest.* The forest has a huge slash problem that the DEIR does not adequately address. Piles of logging debris 12 feet high and 30 feet long are not uncommon. Not only are these piles aesthetic blights, they are fire hazards. *The DEIR incorrectly assumes that slash piles are only a problem near main forest roads.* The public wants to hike throughout the forest without being confronted with such careless and sloppy clean-up work.

11 11. *Recreation corridors should be designated now.* There is no need to wait for "visitor-use surveys" as proposed by the DEIR. Jackson's staff knows where the high-use areas are. They would include all the principal routes to and around the camping facilities and the old-growth groves. Future surveys can refine and add to these obvious high visitor-use areas. Failure to designate these now would result in significant adverse impacts to aesthetic and recreation resources because proposed feasible mitigations would not be implemented immediately.

Jackson Forest has the potential to be a beautiful, successful, and well-regarded regional resource. The Management Plan update process provides CDF with the opportunity to seriously consider and respond to long-standing public concerns about the forest's management.

Forests Forever urges you to recognize your responsibility to manage Jackson

page five

Demonstration State Forest for the public resource it is—for all Californians, who own it, and for the range of uses they view as appropriate and environmentally sound.

Sincerely,

Paul Hughes
Executive Director

cc: *Assemblywoman Carole Migden*
Sen. John Burton
Gov. Gray Davis
Assembly Speaker Pro Tem Fred Keeley

Letter PH-151

Response to Comment 151.1
Alternative E was determined to be the environmentally superior alternative, but it is not the preferred alternative because it does not comply with the CDF's Legislative mandate and project objectives; therefore this alternative was not selected. JDSF is required to comply with the Legislative mandate (PRC 4631) and Board Policy (0351.2), which describe timber production as the primary land use on the forest (DEIR pages 9 and 10). The DFMP complies with the mandate and Board Policy, as well as providing suitable protection of public-trust resources (fish, wildlife, etc.) as analyzed in the DEIR.

Please refer to General Responses 4 and 7 regarding the comment that states "restoring the forest to old-growth approximating conditions."

Please refer to Responses RS-201.7 and 201.12 regarding research, demonstration, and public outreach programs.

Please refer to General Response 9 for analysis of cumulative impacts.

Please refer to Response JN-364.4B regarding the comment that states "Provisions to streams from impacts of timber extraction bear no relation to the widely accepted latest science."

Please refer to General Response 5 regarding Marbled Murrelets.

Response to Comment 151.2
Please refer to General Response 1.

Response to Comment 151.3
Please refer to General Response 4.

Response to Comment 151.4
Please refer to General Response 5.

Response to Comment 151.5
Please refer to General Response 7.

Response to Comment 151.6
Please refer to General Response 8.

Response to Comment 151.7
Please refer to Response F8.5.

Response to Comment 151.8
Please refer to Response F8.6.

Response to Comment 151.9
Please refer to Responses F7.8 and F7.9.

Response to Comment 151.10
Please refer to Response F8.10.

Response to Comment 151.11
Please refer to Response GK-215.

P. O. Box 2285
Berkeley, CA 94702

LM-155

July 14, 2002

RECEIVED
JUL 16 2002
BY:

Dear Chris Rooney:

1 The Draft Management Plan and EIR for Jackson Demonstration State Forest must not be approved. The plan allows massive clearcutting, large-scale commercial logging, cutting of the oldest second-growth stands, inadequate stream protection, and intensive herbicide use.

2 The draft EIR must be revised to include

Miss Lo
P.O. Box
Berkeley, CA

Chief
Deputy
California
P.O

the following:
- Restrict timber operations to those needed to restore the forest to old growth
- Improve wildlife and botanical habitats
- Direct that proceeds from timber harvests be sent within Jackson State

2

The draft EIR must also include data on the cumulative impacts of past and proposed logging operations. The stream protection measures must adhere to the known scientific data.
Jackson State Forest must be restored to an old growth redwood forest for habitat, recreation, education and research & oppose the Draft Management Plan
Sincerely, Irene Margin

3

Letter LM-155

Response to Comment 155.1
Please refer to General Response 1.

Response to Comment 155.2
Please refer to General Responses 2 and 7, and Response PS-2.2.

Response to Comment 155.3
Please refer to General Response 9.

SH-157

RECEIVED
JUL 16 2002

Shanna Haines
1732 McGee Ave.
Berkeley CA 94703
July 7, 2002

Mr. Chris Rowney
Deputy Chief for State Forests
P.O. Box 944246
Sacramento CA 94244

Re: Draft Management Plan and EIR
for Jackson Demonstration State Forest

Dear Mr. Rowney,

1 Please do not approve the Draft Management Plan as it stands. It now allows massive clearcutting, large-scale commercial logging, cutting of the oldest second-growth stands, inadequate stream protection, and intensive use of herbicides.

Although our national forests do have multiple uses, the above activities should not be allowed in our dwindling national treasures. Please, let's preserve the little we have left. The draft EIR should be revised to include the following:

2
- Restrict timber operations to those needed to restore the forest to old growth
- Improve wild life and botanical habitats

over, please →

2
- Direct that proceeds from timber harvests be spent within Jackson State Forest
- Data on the cumulative impacts of past and proposed logging operations
- The stream protection measures must adhere to the known scientific data.

3
Most importantly, Jackson State Forest must be restored to an old growth redwood forest for habitat, recreation, education, and research.

Please insure that the final version of the Draft Management Plan addresses these issues and does <u>not</u> allow the logging activities I mentioned in the first paragraph of this letter. Thank you.

Sincerely,

Shauna Haine

Letter SH-157

Response to Comment 157.1
Please refer to General Response 1.

Response to Comment 157.2
Please refer to General Responses 2, 7, and 9 and Response PS-2.2.

Response to Comment 157.3
Please refer to General Response 1.

ET-159

JUL 16 2002

124 Judah Street
San Francisco, CA 94122
July 15, 2002

C. Rowney
Deputy Chief of State Forestry
PO Box 944246
Sacramento, California 94244

The enclosed letter is for your information. Please be advised that it was sent to Gov. Davis today.

There is no doubt in my mind that the men and women working on the line every day are dedicated to what they are doing. There is also no doubt in my mind that there are "economic forces" whose interests are táking priority over the interests of the public good.

I am not a "tree-hugger". You are faced with realities of fire danger. We certainly don't want an "Arizona" type fire in this state and we are certainly at risk for one. I do not believe that clear-cutting old redwood growth is a solution. Other solutions may be much more costly, but as any housewife can tell you, "You certainly get what you pay for." If I can do anything to assist you in obtaining the kind of budget that will provide safety for your personnel and allow you to perform your tasks without interference from "business interests", please inform me. I will not, however, support European junkets to look at forests (none of which are comparable anyway) or $1000 desks to make us "feel good". I am interested in the judicious use of limited state funds and I'm willing to have a tax increase to support your work.

Yours truly,

Eleanor Troxel-Holland

Eleanor Troxel-Holland

Cc Gov. Davis
Mr. Sendak
Ms. Tuttle

Letter ET-159

Response to Comment 159.1
Please refer to General Response 1.

SM-160

July 13, 2002

JUL 1 6 2002

Chris Rowney, Deputy Chief for State Forests
CDF
P.O. Box 944246
Sacramento CA 94244

Dear Mr. Rowney:

I am writing as a private citizen who has spent a great deal of time in the Mendocino Woodlands, a part of the Jackson State Forest. I was fortunate enough to be a camper and a counselor at YWCA Camp Timberlake, which used the beautiful WPA built facilities of the largest of the three camps in Mendocino Woodlands.

This was a remarkable area. I spent my summers in the forest from 1953 until 1964. I saw otters in the rivers, visited beaver dams, lived with trees nearly four of feet, watched the great blue herons fly down the river, saw trout facing in the deeper pools in our stream. We hiked all over the area, a great way to become knowledgeable about the logging industry which logged this area at the end of the nineteenth century. This industry was selective. It did not use herbicides, thereby leaving the forest ecosystem intact. It did not clearcut. There is a fungus that does not grow in any other forest system, by the way. It is called pipe fungus and grows in the duff under the redwoods when there is other vegetation present as well. We called it fairy pipes as it gives the impression of a little pipe that might be used by a small forest being like a fairy of an elf.

I have spent time in lots of forests, including many of our coastal forests. There is a special quality to Jackson forest that sets it apart from any of the others. Whether it is because of the particular weather system or that until recently it was not easy to get to there, I don't know. I do know that it is a treasure and it should be preserved as old growth for the many plants and animals that depend upon its unspoiled habitat. You would not believe the incredible life that is in those woods. I was a nature counselor when I worked at Timberlake in the 1960's. I saw such wonders and shared them with my young students. We watched a foot-long pink and black salamander make its way across the beach to the water in our stream. We saw a deep maroon cecilia moth with a 5 inch wingspan on our lodge wall; we saw Jerusalem crickets on a bridge, I was buzzed by a June bug with an emerald green body and gold antennae which was about 2 inches long. Over a whole season we watched the mother river otter raise her 3 babies.

When hunting season began in August, the deer came down in great numbers to graze our meadows and drink at our stream. We saw badgers, bob-cats, lots of small forest creatures.

There came a time when these wonders ceased to appear to us as there was intensive logging going on just over the hill. The quality of the water in the river changed before our eyes. All life in it vanished except for a few water skeesters. There were no more deer, no more otters, no more large insects, no more great blue herons, no more trout in the stream, no more songbirds in the trees (although the jays were unaffected). Almost overnight everything disappeared.

Jackson State Forest is a treasure for the entire state. I do feel that there are other ways to cut this resource which can reduce the amount of destruction. I don't feel that the current clear cut is one. Would you please consider other alternatives before you mean to destroy this precious

Dear:

Thank you for your correspondence.

Sincerely,

Sandra Morris
[illegible]
Oakland, CA 94602

Letter SM-160

Response to Comment 160.1
Please refer to General Response 1.

PP-165

JUL 16 2002

Christopher Rowney
California Department of Forestry
State Forest Program
P. O. Box 944246
Sacramento, CA 94244-2460

July 13, 2002

Dear Mr. Rowney:

1 As a former member of the Citizen Advisory Committee on the Jackson State Forest I am vitally interested in its stewardship management. As you know the Report of the committee was submitted to Director Wilson in a revised edition dated 1998. With the exception of Item #3 under fish and wildlife I supported the final recommendations made by the committee. More particularly I draw your attention to Jim Greig's letter dated November 12, 1998 and his letter dated December 31, 1997 which are included in the report on pages C-16, C-17 and C-42 of the report. I am in complete agreement with Jim's forest management philosophy and believe these management guidelines agree closely with those of the committee.

2 I would hope the management philosophies referred to above would be a core part of the future management guidelines of Jackson State Forest. By maintaining a high level of environmentally excellent forest management the State can demonstrate to private forest owners, the environmental community and the public at large that our California forests can produce a vitally needed resource for our burgeoning population. At the same time maintaining excellent wildlife habitat and water quality will, I believe, be a necessary component of forestry of the future and Jackson State Demonstration Forest is the ideal place to showcase to California and the world that excellent forestry can be a win win process.

Sincerely,

Peter T. Parker

Peter T. Parker
1929 Meadowbrook Road
Altadena, CA 91001

Letter PP-165

Response to Comments 165.1 and 165.2
Please refer to General Responses 1 and 2.

E2-168

3607 Chestnut Street
Lafayette, CA 94549
July 15, 2002

Christopher Rowney
State Forest Program Manager
California Dept. of Forestry & Fire Protection
Sacramento, CA 94244-2460

Dear Mr. Rowney,

I am writing because I understand that there is a danger of large-scale clearcutting at the Jackson State Forest. Please send me any information that you can about this, and please let me know what your position is regarding clear cutting at Jackson State Forest.

I believe it is your mission to keep our public lands protected – especially to keep the forests on these lands protected from clear cutting.

Yours truly,

Elaine Zacher

Elaine Zacher

RECEIVED
JUL 16 2002

Letter EZ-168

Response to Comments 168.1
The state forest is managed to demonstrate a wide variety of stand management and timber harvesting techniques. It is expected that private landowners throughout the region also utilize some methods of harvest. While some people find even-aged management to be objectionable, this does not alter the fact that it will continue to be used by forest landowners throughout the State, and one that the state forest system is mandated to continue to demonstrate and research.

The dense mature second growth forest present on JDSF is the product of historic clear cutting on a broad scale as described in the DEIR. More recently, the practice of clear cutting has declined. Table 21 on DEIR page 161 indicates that 1,913 acres have been clearcut 1980. The majority of the clear cutting occurred prior to 1990, with less than 300 acres of clear cutting since 1990. Even-aged management has been conducted in compliance with forest practice regulations that include provisions for cutting unit or patch size, unit spacing, and time and stocking requirements to be met before adjacent stands can be cut. One of the goals of JDSF is to maintain a diverse range of timber and habitat conditions, including some clearcut areas, to promote a diverse research program and diverse habitats.

Additional information on silvicultural methods used on JDSF is contained in the Draft Management Plan and the Draft Environmental Impact Report. This public information may be accessed on CDF's website, CDF Howard Forest Fire Station near Willits, JDSF Headquarters in Fort Bragg, the CDF office in Santa Rosa, and the public libraries in Ukiah and in Fort Bragg.

JA-175

Joshua Eli Asarian
1736 Beverly Drive
Arcata, CA 95521
(707) 822-9200
eliasarian@postmark.net

Christopher Rowney
California Deptartment of Forestry
P.O. Box 944246
Sacramento, CA 94244-2460

July 15, 2002

Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

1 I was disappointed by the Draft Management Plan and EIR for Jackson Demonstration State Forest. I approach JDSF from two perspective: as a former resident of JDSF and a fisheries biologist. My first choice for a management plan is Alternative E (Late Seral Emphasis), with my second choice being Alternative D (Citizens Recommendations). I object to the use of even-aged management, herbicides, cutting the oldest second-growth forests, the rate of harvest, and road-building. I also found a disturbing lack of analysis in the EIR of the regional significance of the ecological resources of JDSF for endangered species recovery.

2 **• There should be no cutting in the oldest second growth**
I lived the first 18 years of my life on Little Lake Road 3 miles east of Mendocino on my parents property, which borders JDSF. I spent my childhood playing in JDSF and have a strong emotional attachment to it. I was dismayed to see the the area south of Little Lake Road (Road 408) will be logged. Nearly that entire section is roadless and approaching late-seral condition. It (see attached map) should be added to the Woodlands STA. In order to harvest timber, I

3 assume that there will be new roads contructed and tractor driving all over it. This area is an extremely productive mushroom producing area and it is heavily utilized by the public for this purpose. It seems likely that timber harvest will damage this area's value by compacting soil, decreasing canopy, and decreasing humidity. The old (60-140) year old second growth forests in JDSF are a resource of regional importance and should not be cut, except to thin out small trees and restore late-seral conditions.

4 **• Herbicides**
I opposed the use of herbicides and pesticides because of the unknown impacts to water quality, wildlife, and human health. These chemicals have only been minimally tested and are assumed to be "innocent unless proven guilty". So the mere fact that they are legal does not mean that they have been proven safe, it just means that they have not been proven unsafe. If there were no (or less) clearcutting in JDSF, there would be no (or less) need for herbicides.

JUL 17 2002

• **Clearcutting**
Over 14,000 acres will be "uneven-aged management" with the Draft Management Plan. Is that much really necessary for "demonstration" purposes?

5 • **The proposed rate of cut is too high.**
The Draft Management Plan appears to be essentially a continuation of the current "plan-less" management, with a few minor improvements to wildlife habitat protections (increased stream buffers, etc). In fact, logging will increase from a current rate of 29 MMBF/year to 21 MMBD/year. Although this is below the LTSY of 43 MMBD/year, it is still too much given JDSF's UNIQUE biological importance (see below). I favor the 10 MMBD/year cut for Alternative E.

• **Lack of analysis of the regional ecological importance of JDSF**
I find that the Draft Management Plan and EIR are inadequate because they lack a watershed perspective and neglect the principles of conservation biology. There was no serious and thorough analysis of JDSF's ecological importance at a regional scale. This statement from the EIR (page 58, ALTERNATIVES CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION) was particularly troubling and illustrates my point:

> "However, an alternative that guaranteed recovery for all threatened and endangered species is not feasible at JDSF. In addition, regardless of the level of habitat protection provided, it is not scientifically possible for CDF, or any other landowner, to guarantee that a species will recover. JDSF is too small to provide the ability for species to recover..."

The statement above is partly true, but it is also misleading. True, JDSF is not large enough to fully recovery the coho and marbled murrelet. However, the management of JDSF almost certainly has a greater impact on these two species than any other 50,000 block of land in Mendocino County. I do not think that CDF realizes the magnitude of the importance of the biological resources of JDSF. JDSF is THE KEY to endangered species recover in Mendocino
6 County. Question: where in Mendocino County can you find contiguous areas of tens of thousands of acres of well-stocked second-growth redwoods forest? Answer: only in JDSF! Question: where are nearly all the coho on the coast? Answer: in JDSF! JDSF (or at least parts of it) should be a core biological reserve at the center of a regional conservation strategy. There are no significant blocks of old-growth forest remaining in Mendocino County. Nor are there any blocks of land that are in recovery towards old-growth. Simply put, JDSF is THE ONLY piece of land in Mendocino County where entire watersheds, at spatial scales of tens of thousands of acres, can be recovered to old growth. I worked in winter of 2000 as a seasonal aid to the California Department of Fish and Game in Fort Bragg doing surveys of the distribution and abundance of coho salmon adults and juveniles on the coast. We focused our studies on JDSF, because THAT IS WHERE NEARLY ALL OF THE REMAINING COHO ON THE COAST ARE! With the exception of the Albion River and Pudding Creek (which each have spawning runs of 20-200 coho adults per year), I know of no other rivers or streams outside of JDSF that contain significant numbers (averaging more than 20 adult fish/year) of coho salmon. The cumulative effect of 140 years of timber harvest has degraded the aquatic habitats in

6 Mendocino County to the point where coho are on the verge of extinction. Even salmon runs in JDSF (with the exception of the South Fork Noyo) are not far from extinction.

7 I proposed that Hare Creek, South Fork Noyo (and all tributaries), and Little North Fork Big River be set aside as core reserves for coho and other old-growth dependent wildlife. These watersheds should be managed to be as close a possible to the original roadless ancient forest. This will require timber harvest to remove smaller trees and leaving larger ones. Appendix 8A-27 of the EIR says, "The development of late successional forest conditions will be minimal" in areas of JDSF managed for timber-harvest. That is unacceptable! I can accept the fact that large private timber corporations do not have to provide the highest quality wildlife habitat, after all, their purpose is to make money. However, JDSF is public land and should be managed to improve public-trust resources like fish and wildlife.

8 I was pleased to see that "Most of the Mendocino Woodlands Special Treatment Area will be managed as a late-seral habitat recruitment area." (DMP, p 55). However, I was dismayed to see the boundaries of it. They appear to have only a partial correspondence to watershed boundaries. Yes, the STA will protect the visual resources of the Woodlands Park, but the boundaries seem arbitrary. I assume that CDF's intention for the STA is recruit late-seral stage forest for the purposes of improving and protecting wildlife habitat? Well then why don't you include all your holdings in the Little North Fork Big River watershed as part of the STA? If you are really trying to protect wildlife (especially salmon), then you must plan on a watershed basis, not arbitrary boundaries that have their roots in 50-year old land transactions. With the public acquisition of the Big River estuary, and the proximity the Russian Gulch and Little River State Parks, there are incredible opportunities for restoring large areas of late-seral forest in the southwestern portion of JDSF. This was not considered in the EIR; it should have been.

9 The riparian protections in the Draft Management plan are also inadequate. As JDSF is public land, the highest standards of habitat protections should be expected.

• Road Management Plan & Sediment Impaired Watershed listed by EPA under Clean Water Act

I have serious reservations with the road management plan. The goals are noble, but specifics are lacking and hence and adequate assessment of the environmental impacts is impossible. An excerpt from the EIR find of a less than significant impact of sedimentation (p 118):

10

> "The amount of sediment resulting from road-related shallow landslides from 1979 to 1996 for all the planning watersheds draining JDSF was approximately half that found during 1958 to 1978 (DFMP). Erosion from road related shallow landslides and surface erosion is expected to continue dropping as the Road Management Plan on the State Forest is implemented and exclusion of tractors in WLPZs. Sediment delivery from mass wasting or unstable hillslope locations should be reduced over the current condition by implementing the hillslope management activities stated in the DFMP. Therefore, this is considered a less than significant impact."
>
> "A specific target road density, however, will not be used." (EIR, p. 113)

I strongly disagree with these two excerpts. So, there are no hard standards as to how many miles of roads will be constructed, decommissions, or allowable volumes of sediment that can be produced by roads. If the plan itself is vague, how can its environmental impact be properly evaluated? Without hard standards, JDSF managers can do whatever they want.

10 I believe that all watercourses within JDSF have been listed a sediment impaired by the EPA. So even if the rates of sedimentation are decreasing over time, there is still too much sediment in the stream channels. So ANY action that will increase sediment in stream channels is a significant impact.

• **Unmapped old growth needs protection**

I know of the existence of an old-growth grove that is not on your list of old-growth groves. I've drawn in on a map and attached here. Please respond to me in writing on this point, as it is very important and I will keep nagging CDF until I get an answer that assures me that this grove is 11 protected. The grove is perhaps 800 feet by 300 feet and contains maybe 100 old-growth redwoods, as well as old growth Douglas-fir. It is a steep canyon at the headwaters of a small tributary to Big River, surrounded on 3 sides by pygmy forest.

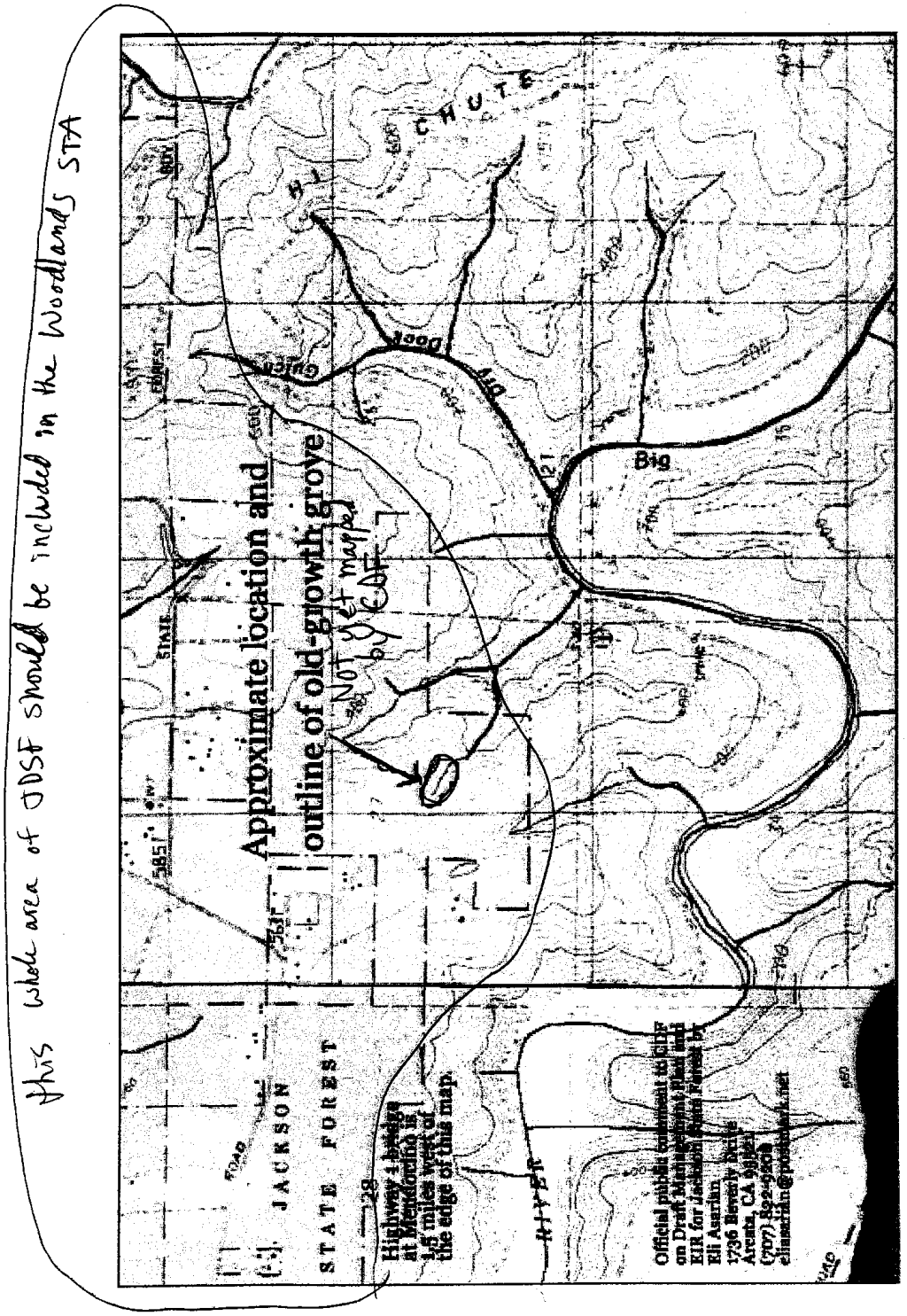
• **No submittal of public comments via E-mail**

12 I am also puzzled as to why CDF is not accepting public comments via e-mail. What is the rational for this? The cynical part of me thinks that CDF may be trying to reduce public input. I do not want to believe that to be true. Is there a more legitimate reason?

Please take my comments into consideration.

Sincerely,

Joshua Eli Asarian


This whole area of DDSF should be included in the Woodlands STA
Approximate location and
outline of old-growth grove
NOT yet mapped by CDF
JACKSON
STATE FOREST
Highway 1 bridge
at Mendocino R.
1.5 miles west of
the edge of this map.
Big
CHUTE
Official public comment to GHP
on Draft Management Plan and
EIR for Jackson State Forest by
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Letter JA-175

Response to Comment 175.1
Please refer to General Responses 1 and 2. Endangered species protection and recovery and regional watershed and conservation planning were considered as alternatives, but not considered in detail. Please refer to DEIR pages 57 – 60 for the rationale. Protection and maintenance of resources is provided in the Plan to insure no significant adverse effects will occur to sensitive species as a result of implementation.

Response to Comment 175.2 and 175.3
Please refer to General Response 1 and 2. Late seral recruitment is provided for in the Plan and analyzed in the DEIR. No significant adverse effects related to late seral habitat would occur as a result of implementation.

The area south of Little Lake Road (Road 408) indicated on the map attached to the comments is not included in the short-term harvest schedule. No harvesting is planned in the area. Mushroom picking will not be affected. The area is included in an uneven-aged management area that will retain significant late seral characteristics should harvest occur in the future.

Response to Comment 175.4
Please refer to General Response 2. Please refer to Response EC-37.4.

Response to Comment 175.5
Please refer to General Response 1 and Response RL-238.19 and .20. The DEIR analyzed the Silvicultural Allocation Plan (SAP) of the DFMP (page 33; DEIR Section VII 6.3 Timber Resources). It was determined that the SAP was compatible with the Legislative Mandate, Board Policies, FPR, and would result in no significant adverse impacts as a result of implementation.

The proposed annual harvest level of 31-33 MMBF within the period of the Plan was determined to be compatible with the goal of non-declining inventory. As discussed on page 182 of the DEIR, a:

> …harvest level that averages 31-33 million board feet per year is less than the modeled growth and LTSY projection of 40 to 50 million board feet per year, and significantly less than the measured growth of 65 million board feet per year.

No significant adverse effects related to the proposed rate of cut are anticipated.

Response to Comment 175.6
Please refer to General Response 1. Page 60 of the DEIR includes a discussion of the alternative "Regional Watershed and Conservation Planning." This alternative considered JDSF's ecological importance at a regional scale, but was eliminated from further consideration and analysis due to technical infeasibility, expansion of the project scope and geographic area beyond the DFMP's basic purpose, and the likelihood of increased impacts associated with more intense off-site activities resulting from using JDSF as a mitigation bank. The management of JDSF as proposed in the DFMP and assessed in the DEIR will not have a significant impact on coho, marbled murrelets, or other sensitive species.

Response to Comment 175.7
This proposal was considered in Alternative E--Late Seral Emphasis. Alternative E was determined to be the environmentally superior alternative, but it is not the preferred alternative because it does not comply with the CDF's Legislative mandate and project objectives; therefore this alternative was not selected. JDSF is required to comply with the Legislative mandate (PRC 4631) and Board Policy (0351.2), which describe timber production as the primary land use on the forest (DEIR pages 9 and 10). The DFMP complies with the mandate and Board Policy, as well as providing suitable protection of public-trust resources (fish, wildlife, etc.) as analyzed in the DEIR.

Late seral development will be minimal in the short term due to the long timeline needed to develop late seral characteristics.

Response to Comment 175.8
The Mendocino Woodlands Special Treatment Area (MWSTA) comprises a total of 2,511 acres located adjacent to the Mendocino Woodlands where JDSF activities are focused to promote late-succession forest conditions, maintain aesthetic qualities, and limit impacts on the operation of Mendocino Woodlands (DFMP page 147). Page 31 of the DFMP describes a Memorandum of Understanding between CDF and the Department of Parks and Recreation, where provisions of the Memorandum are intended to protect the use and values associated with the Mendocino Woodlands camp area. As such, boundaries of the MWSTA were established for this consideration, and it is unnecessary to expand beyond the current location.

Response to Comment 175.9
Please refer to response to comment JN-364.4

Response to Comment 175.10
The Big River and Noyo River watersheds are listed as sediment impaired by the EPA, other watersheds in JDSF are not. Also, please refer to Responses FR-126.16 and .28, and HW-196.1.

Measures to reduce sediment input into stream channels are contained in the DFMP and discussed in the DEIR. Measures to remove sediment deposition from legacy roads are contained in the DFMP and discussed in the DEIR. Also, please refer to response FR-126.25 (RWQCB) regarding the action plan for implementing TMDLs established by the USEPA.

Response to Comment 175.11
The DFMP contains provisions for protection of old-growth stands and trees located outside of identified stands. The protection measures are described on pages 59-60 of the DFMP.

Response to Comment 175.12
Please refer to General Response 3.

EB-176

July 15, 2002

Mr. Chris Rowney, Program Manager
Demonstration State Forests
California Department of Forestry
Post Office Box 944246
Sacramento, CA 94244-2460

Dear Mr. Rowney:

I write to you with great concern over the potential logging of the Jackson State Forest.

As a state agency, it is imperative that the CDF not approve projects that would jeopardize the continued existence of any endangered species. The murrelets nesting in Russian Gulch need the surrounding forests to protect them.

I urge you review the new plans regarding the logging of JDSF with an eye to protecting and conserving these most valuable stands of redwoods - not removing them from the land.

JUL 1 9 2002

page 2 of 2

Mr. Chris Rooney, Program Manager

Doubtless, the economic pressures that face us all are ready to persuade us to sell board feet instead of protecting endangered birds. Unfortunately, a short-sighted logging adventure is unlikely to bring financial rewards sufficient to balance the loss of habitat.

2 Please recognize your ability to fulfill your agency's charge by seeking alternatives to the currently proposed management plan. In decades to come you will be honored for taking the long view instead of looking for short term financial solutions.

Best regards and
sincerely,

Edin Draper Beard
1429 Davis Avenue
Concord, CA 94518

JUL 17 2002

Letter EB-176

Response to Comment 176.1 and 176.2
Please refer to General Responses 1 and 2.

SK- 194

Scott Kravitz
3827 Cesar Chavez St.
San Francisco, CA 94131
(415) 282-4752

Chris Rowney, Deputy Chief for State Forests
CDF
PO Box 944246
Sacramento, CA 94244

14 July, 2002

re: Jackson State Forest Management Plan

Dear Deputy Chief Rowney:

Having viewed the proposed Forest Management Plan and DEIR for Jackson Demonstration State Forest I am alarmed at your agency's apparent disregard for the health of the forest and it's wildlife.

1 The plan leans far too heavily on the side of extraction, and gives barely a nod to conservation- creating islands of forested areas amid large cuts. This is nothing new for your agency. What is especially distressing about the plan, however, is the failure to acknowledge the federal recovery plan for the Marbled Murrelet. Since it lies within the Conservation Zone, any plan for logging within
2 Jackson State Forest must first consider the survival of this endangered specie. This is not only your moral duty, but your legal obligation.

This is public land. The timber industry has no claim on this forest that can change that fact. I urge you to revise this plan and DEIR in a way that protects the forest and its wildlife for the future.

Sincerely,

Scott Kravitz

JUL 17 2002

Letter SK-194

Response to Comment 194.1
Please refer to General Response 1 and Response JA-175.5.

Response to Comment 194.2
Please refer to General Response 5.

HW-196

HAROLD WOLLENBERG - CERTIFIED ENGINEERING GEOLOGIST
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July 14, 2002

To: Departmant of Forestry
Re.: Draft Jackson State Forest EIR

I express my reservations about the long-term plans for Jackson State Demonstration Forest, presently envisioned by CDF.

1 As a registered geologist, I am especially concerned by the geological implications for clearcutting indicated by options in the JDSF Draft Management Plan, where even-aged management, essentially clearcutting, is prescribed for 15,026 acres, nearly one-third of JDSF's total area.

Clearcutting of steep, as well as relatively flat slopes poses the long-term danger of introducing sediment into tributary and main-stem streams where the resulting siltation raises streambed levels and degrades salmon and steelhead spawning gravels.

The effects of removal of trees from critical slopes, and areas immediately above them, on the hydrogeological regime controlling the stability of those slopes are demonstrated by landslides in the Mendocino County Coast Ranges. Removal of the forest canopy permits direct impact of rainfall, enhancing infiltration of water into a slope's soil and fractured rock substrate. Reduction of evapotranspiration by removal of trees in a clearcut permits lengthening of the period of near-saturated soil conditions well into the dry season. The effects of absence of root strength, increased infiltration, and increased degree of saturation on slope instability are documented in the geological literature, where it is observed that on clearcut slopes, even short bursts of rain on a wet soil enhance erosion and cause landsliding.

I understand that, partly for these reasons Mendocino Redwoods Company have abandoned even-aged management, e.g. clearcutting, on their 200,000 acres of forest in Mendocino and Sonoma Counties, and now log to prescriptions that preserve a substantial percentage of the original forest canopy.

2 I would hope that as a publicly - owned demonstration forest, JDSF could at least match, if not do better than Mendocino Redwoods, whose products are now certified for responsible, sustainable forestry.

In these respects, I recommend that uneven-aged silvicultural management practices be followed that achieve or retain at least 60 percent of the conifer forest canopy.

Harold Wollenberg

Letter HW-196

Response to Comment 196.1 and 196.2
The concerns expressed regarding clear cutting slopes within JDSF and the inferred increases in landsliding have not been documented during the extensive studies in the Caspar Creek watershed. In the North Fork of Caspar Creek, where half of the watershed was clearcut between 1985 and 1991, the number and size of landslides after timber operations have been similar in logged and unlogged units (Cafferata and Spittler, 1998). While removal of canopy does alter hydrologic conditions within hillslopes, these changes appear to trigger landslides only on the most sensitive slopes. Qualified geologists can recognize most hillslopes that may be impacted by even minor hydrologic changes in the field. As the proposed management plan requires inspection of susceptible hillslopes by licensed geologists, the plan appears to adequately mitigate the potential for significant impacts associated with management-related landsliding and sedimentation. Please refer to General Response 1 and 8.

EP- 199

15 July, 2002

Demonstration State Forest Program Manager
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

Dear Mr. Rowney:

Thank you for the opportunity to represent those of us in the population who may not be intimately familiar with the issues involved in the DEIR for the Jackson Demonstration State Forest Management Plan. I may not be able to assist you in further refining the framework for your continued efforts in that area but I'm feel perfectly capable of stating that the most rigorous scrubbing of the DEIR should be done so that no more logging should be permitted unless the loggers are able to persuasively defend their actions on the basis of fire protection or the health of the ecosystem there.

Everywhere on the planet too many cases of overcutting is occurring because of commercial pressures to do so, thus creating further stress on the global ecosystem which is heavily dependent on forests for crucial earthsaving chores. Until as a society we're able to come up with alternatives to our dependency on wood, this is likely to continue. I'd like to see more attention being paid to identifying wood alternatives because doing so represents a clear signal that we're ready to accept our responsibility for maintaining global ecosystem health and will make the appropriate changes that are necessary to accomplish that.

Thank you for your attention to this input on my part. I'll be watching what happens with great interest.

Sincerely,

Eleanor Prentiss

Eleanor Prentiss
10 Corte Solano
Greenbrae, CA 94904
415-925-1799

JUL 17 2002

Letter EP-199

Response to Comment 199.1
Please refer to General Responses 1 and 2.

SN-200

15 July 2002

Christopher P. Rowney
Demonstration State Forest Program Manager
California Department of Forestry & Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

RECEIVED
JUL 18 2002

RE: Draft EIR for the Jackson Demonstration State Forest

Dear Sir:

Following are my comments on the Draft EIR for the Jackson Demonstration State Forest (DEIR). In making these comments I have extensively reviewed the DEIR and associated maps, the Marbled Murrelet (*Brachyramphus marmoratus*) Recovery Plan (USFWS 1997), Critical Habitat designation for the Marbled Murrelet (USFWS 1996), and various references on murrelet biology (see Literature Cited).

I am a Research Wildlife Biologist and Senior Faculty Research Assistant with the Oregon Cooperative Wildlife Research Unit (OCWRU) at Oregon State University. I lead the Marbled Murrelet research program for the OCWRU in the State of Oregon. I have been conducting research specific to the Marbled Murrelet since 1988. Most of my research has taken place in western Oregon but I have also conducted research projects in Alaska, Washington, and California. My research on murrelets has focused on their behavior and breeding biology (e.g., Nelson and Hamer 1995a, Nelson and Peck 1995), and nest-site characteristics and habitat associations (e.g., Nelson and Wilson 2001). In addition, I helped to develop survey techniques for this species and am an author of the Pacific Seabird Group (PSG) Survey Protocol for surveying Marbled Murrelets in forests (Ralph et al. 1994, Evans et al. 2000). I was Coordinator of the Marbled Murrelet Technical Committee of the Pacific Seabird Group from 1990-1993 and participated as an advisor to the U.S. Fish and Wildlife (USFWS) Marbled Murrelet Recovery Team from 1992-1997. I have visited most known murrelet nests in Washington, Oregon and California and am familiar with the habitat of many occupied sites in these three states. I am also familiar with the results of most murrelet research projects that have been conducted on murrelets throughout their range.

Marbled Murrelet Biology and Habitat Associations

The information you present on the biology and habitat associations of Marbled Murrelets (pages 245-249) is fairly accurate, but somewhat outdated (most citations from mid 1990s). The murrelet is known to nest in habitat other than old-growth; in Oregon nests have been located in

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mature forests (80-200 yrs) and young (65-80 yrs) hemlock forests with mistletoe infestations (Nelson and Wilson 2001) and in California nests have been located in residual redwood forests (E. Burkett, pers. comm.). In addition, nests have been located in hardwood trees (Bradley and Cooke 2001) and in stands with low canopy cover (Nelson and Wilson 2001). The most important features of murrelet nest sites are platform abundance and the presence of nesting substrate (moss or duff; Meekins and Hamer 1999, Nelson and Wilson 2001). Canopy cover does not appear to be a key variable for selection of nesting sites (cover at the tree scale is more critical for successful nesting than stand-level canopy cover; in fact many nests have been located near canopy gaps).

1 This new information suggests that murrelets could be nesting in other stands besides the old-growth forests on JDSF and supplemental habitat (as suggested by the Marbled Murrelet Recovery Plan, see below) could be created in a relatively short time period given the current age of some stands on the JDSF.

Additional recent research on murrelet habitat associations at the landscape scale suggest that: (1) murrelet nests are less successful in areas close to human habitation or human use (Marzluff et al. 2000); (2) management efforts should focus on protecting or creating large, contiguous blocks of habitat, especially near the coast (Meyer and Miller 2002); and (3) murrelets nest in low densities therefore large forested reserves are needed to maintain and improve murrelet populations (Conroy et al. 2002).

Contrary to the discussion on page 248 of the DEIR, Marbled Murrelets are known to be occupying Russian Gulch State Park.

Data from Mendocino County

Marbled Murrelets are known to occur in Mendocino County. Birds have been detected in numerous inland locations including, but not limited to, Russian Gulch (adjacent to JDSF), Alder Creek, Admiral Stanley Park, Branscomb reserve, Big River, Greenwood Creek, Gualala River, Garcia River, and the Albion (J. Stein pers. comm.). Possible detections have been recorded at Digger Creek within the JDSF (DIER p. 247). Birds have also been sighted on the ocean adjacent to the Mendocino Coast (e.g., Gualala River, Tenmile River, Russian Gulch, Alder Creek, Stewarts Point; C. Strong, J. Stein, pers. comm.) and a murrelet holding a fish was seen at Galloway Creek (E. Burkett, pers. comm.). Recent radar surveys have further documented the occurrence and persistence of birds in Mendocino County (E. Burkett, D. Meekins, pers. comm). These birds do not appear to be part of the Santa Cruz population as all birds radioed at Ano Nuevo Bay, except one, did not venture north of Pt. Reyes (Z. Peery, E. Burkett, pers. comm.). In addition, no birds from the Humboldt population have ventured south of the Kings Range (based on 23 radioed birds; Golightly et al. 2002). All of these data point to the fact that murrelets are nesting in Mendocino County and probably in the vicinity of JDSF.

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Because of the difficulty of detecting murrelets in "low use" areas such as Mendocino County (Evans et al. 2000), any future murrelet surveys should include very intensive surveys (more stations per acre and more surveys per year than required by the PSG protocol; Evans et al. 2000). Radar surveys should also be conducted in conjunction with the intensive protocol surveys. These surveys will be important for monitoring murrelets in the area and for making revisions to future management plans.

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Marbled Murrelet Recovery Plan

The Marbled Murrelet Recovery Plan (USFWS 1997: p.129) recognizes the need for recruitment habitat in Zone 5, which includes Mendocino, Sonoma and Marin counties. This area is vital to the conservation of the murrelet and extremely important for the future reconnection of this population with those in Humboldt and Santa Cruz counties. The JDSF represents the largest block of public coastal forested land between Humboldt and Santa Cruz counties thereby offering the best opportunity to develop new suitable habitat and fill in the north/south geographic distribution of the Marbled Murrelet. In addition, because Russian Gulch State Park is one of only four nest sites of murrelets in Recovery Zone 5 known to date (USFWS letter to CDF dated 24 June 2002), the 80-110 year old habitat on JDSF adjacent to this park will be important for buffering and creating a large block of contiguous nesting habitat.

The DEIR does not point out that the DFMP does not meet the recommendations of the Recovery Plan nor does it provide mitigations in order to bring the DFMP in compliance with the Recovery Plan.

Critical Habitat Designation

> "JDSF was designated as critical habitat by the USFWS (USFWS 1996). Criteria for critical habitat include the presence of suitable nesting habitat, presence of murrelets, and proximity to foraging habitat. Critical habitat was also designated in zones of current low use by murrelets. These areas are intended to support the USFWSs goal to reduce gaps in the species nesting distribution, and help buffer the species from future catastrophic events such as oil spills and forest fires. JDSF is the largest contiguous parcel of public land on the Mendocino County coast. In California, 175,500 acres (71,040 ha) of state lands were designated as critical habitat, of which JDSF constitutes about 29 percent." (DEIR p.249).

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}).

The California Endangered Species Act (CESA; Fish and Game Code 2050-2116)

> CESA states that ".....it is the policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat..... It is also state policy to disapprove projects that are proposed without feasible mitigation to reduce the impacts below the level of significance and that would jeopardize the continued existence of any endangered or threatened species or result in the adverse modification of habitat essential to the existence of those

species." (DEIR p.260).

Further CESA states ".....to use, and the use of, all methods and procedures that are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary". This implies that "fundamentally the provisions of the CESA include those of the Federal recovery planning process under the Endangered Species Act " (ESA; USFWS 1997: p.79). Therefore, the California Department of Forestry (CDF) would appear to be responsible for contributing to the survival and recovery of the Marbled Murrelet in addition to the designation of the JDSF as a demonstration forest.

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The Forest Management Plan Wildlife Goal (DEIR p.262) is to protect or improve current populations and habitat. In order to accomplish this for the murrelet, and meet the goals of the federal ESA, additional habitat, beyond the old-growth groves and associated buffers, would need to be provided, especially on the western portion of JDSF.

Compliance with CEQA

"Based on policy and guidance provided by CEQA (Public Resources Code (PRC) Section 21001 and the CEQA Guidelines), an impact of the proposed project would be considered significant if it results in one or more of the following:
· Have substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
· Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
· Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or State habitat conservation plan related to a wildlife resource.
· Cause a wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community.
· Reduce the number or restrict the range of a rare or endangered animal" (DEIR p.263).

The DEIR states that "The measures proposed in the DFMP will ensure that Marbled Murrelets or their habitats are not significantly impacted" (p.269) and "The proposed action, with the incorporation of mitigations....., does not have the potential to reduce the number or restrict the range of a rare or endangered animal." (p.272). However, the State Park Special Treatment Areas and WLPZs, do not provide an adequate buffer to the known murrelet site in Russian Gulch State Park, therefore any logging in the area would probably impact murrelet habitat and the murrelets nesting there. In addition, by not managing the habitat adjacent to Russian Gulch State Park as a future old-growth reserve, the range of this listed species will be restricted. A large late seral forest with no harvesting should be provided adjacent to Russian Gulch to prevent any impacts to murrelet habitat and provide for the survival and recovery of this species.

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Watercourse and Lake Protection Zones (WLPZs)

The proposed WLPZs of up to only 150 ft will not be large enough to provide suitable habitat for murrelets. While murrelets have nested in small stands (smallest = 5 ac; Nelson 1997), nest success is usually low within 50 m of edges (27% success; Manley and Nelson1999, Manley et al. 1999). Murrelets will require larger-sized stands for successful nesting, therefore the WLPZs can not be counted as providing adequate habitat for murrelets, unless they are adjacent to large stands of late seral forests.

Recreation Areas

The campground, picnic, and trail areas will provide unsuitable habitat for murrelets because of disturbance and the potential for increased predator populations. Murrelets may be negatively affected by noise levels, motion under nest trees, and increased corvid (ravens and jays) populations. It has been demonstrated that corvid populations are higher in fragmented forests and areas of human activities (Brand 1998, Wallen et al. 1998, 1999, Brand and George 2000) and corvids are the major predator of murrelet nests (Nelson and Hamer 1995b, Manley 1999, Luginbuhl et al. 2001). Preliminary results from on-going research into human disturbance to nesting murrelets suggests that murrelets are affected by sound and movement within the forest (Hamer and Nelson 1999, Golightly et al. 2002). Therefore, recreation areas are also not suitable habitat for murrelets. Other late seral forests need to be established that meet the specific needs of the Marbled Murrelet.

Additional measures that should be taken to minimize the risk of predation on murrelets include: (1) using only predator proof trash cans in campgrounds, picnic areas and at trailheads; (2) hang signs in all human use areas that warn the public about the dangers and negative impacts of feeding wildlife and throwing garbage on the ground; and (3) institute an educational program to educate the public about the problems with supplemental feeding of wildlife (especially corvids), messy campsites, and garbage. Food attracts predators, which in turn prey on Marbled Murrelets. This is vital to maintaining healthy murrelet populations on the JDSF.

An additional problem with locating murrelet nesting areas in or adjacent to human use areas is hazard tree or limb removal (DFMP p60 and 76). Removal of hazard trees or limbs can remove or modify murrelet nesting habitat. Any areas where this will occur will conflict with murrelet habitat use. Murrelet habitat areas should be separated from recreation areas, and any hazard tree or limb removal near murrelet habitat should be fully justified and mitigated.

Habitat Management

Under the federal Northwest Forest Plan, thinning is currently being used as a means to accelerate the growth of mature forests with the goal of creating late successional forests in the near future. In general this management is being carried out without regard to the specific needs of the Marbled Murrelet (i.e., no one is looking at branch or epiphyte growth or the effects of thinning on murrelet nesting success). There are no data to demonstrate which thinning or other management strategy (e.g., tree topping, inoculation with mistletoe) is the best for creating murrelet nesting habitat. Studies need to be initiated to address the best and quickest means of creating murrelet habitat.

In addition, there are no data showing the effects of thinning on murrelet nesting success.

Given the high predation rates at murrelet nests (65%+, Nelson and Hamer 1995b, Manley 1999) however, many scientists are concerned with using thinning in currently occupied sites because opening up the canopy could allow predators greater access to nest sites. Thinning or partial harvests in stands adjacent to murrelet habitat could also provide perches for predators to watch and pursue nesting birds (Vega 1993; C. Chambers, pers. comm.). The juxtaposition of thinned stands with murrelet habitat should be minimized. There is evidence that pole and mature stands can buffer the effects of fragmentation and minimize predation rates at murrelet nests (Marzluff et al. 2000, Ripple et al. in press). These types of stands should be provided as buffers to murrelet nesting habitat.

When creating new murrelet habitat in the JDSF, a research project should be established to determine the best and fastest ways for creating murrelet nesting platforms. Different methods should be implemented including tree topping and light thinning. The growth rates of limbs should be monitored and cover around limbs measured to determine level of protection. This research should be conducted in a scientifically designed, controlled and monitored study by scientists at universities or agencies who are familiar with murrelet biology. These data will be important for helping land managers manage for murrelet habitat in the future and will make a significant contribution towards recovery of the murrelet.

Conclusions and Recommendations

This plan does not adequately address the value of the JDSF to the local population of murrelets, the distribution of murrelets in Recovery Zone 5, or in the long-term persistence of this species. Given the recommendations in the Recovery Plan, the designation of the JDSF as critical habitat for the murrelet, and the state's obligations under the state ESA and CEQA, the DEIR should have proposed to create a series of large, late seral stands on the west side of the JDSF, with at least one of them being adjacent to Russian Gulch State Park.

The ~1,200 acres proposed for development of older forest characteristics, in association with the existing old-growth stands, will be inadequate for maintaining and recovering murrelet populations given their small size and location primarily on the east side of the forest. Therefore, in addition to saving these areas, (1) a large reserve should be created adjacent to Russian Gulch State Park. The dense forest on the JDSF adjacent to Russian Gulch would make an excellent area for a murrelet reserve. Despite the proximity of this area to human use areas in Russian Gulch, a large reserve is vital to maintaining murrelets in this area; and (2) a second large reserve, linked to Russian Gulch State Park, should be provided to create a contiguous block of older forest adjacent to a known nesting area. While the Woodlands Special Treatment Area would seem to provide an excellent location for this second large reserve, it is located adjacent to Mendocino Woodlands State Park, which includes a variety of camping, recreation and human uses. This second reserve should be separated from areas of human use. Management in these reserve areas would need to be planned carefully to minimize the attraction of predators (see discussion on thinning above) and should be included in a research project to look at ways of creating murrelet habitat in the shortest possible time frame (see discussion on research above).

Overlap of proposed murrelet reserves with recreation areas should be minimized to mitigate any negative effects from predators and disturbance. In addition, locating single trees or large gaps in close proximity to areas set aside or created for murrelets should be minimize to

reduce effects of predation and changes in forest microclimate (changes in forest temperature can affect the growth of epiphytes on limbs which are important for murrelet nesting {Chen et al. 1993}).

Thank you for the opportunity to comment.

Sincerely,

S. Kim Nelson
1865 SW Roth Street
Corvallis, OR 97333

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Letter SN-200

Response to Comment SN-200.1
Efforts were made to review the most recent information available and, as appropriate, incorporate it into the final EIR. Specific references mentioned in the comments were evaluated as available and sections were updated using this new information. This primarily included incorporating the information regarding murrelets at Russian Gulch State Park and elsewhere in Mendocino County. Also, please refer to Response GP-129.5.

Murrelet nesting habitat: Although murrelets are known to nest in younger stands and even on rocky cliffs in other parts of their range, murrelets in California typically nest in old growth. Individual old-growth trees within a younger stand are referred to as "residuals." The most important feature of murrelet nest stands is the availability of nest platforms. Platforms are slow to develop in redwood because of their relatively small limb size and resistance to disease. Douglas-fir, Sitka spruce, hemlock, white-fir, and other "white-wood" conifers and some species of hardwood (e.g. big leaf maple, tanoak), develop larger limb structure and are less resistant than redwood to mistletoe and other infestations which could lead to potential platforms.

The references provided in the comment indicate that murrelets nest in habitats other than old growth in Washington and Oregon, however, this is obviously the exception rather than the rule when one looks at "use vs. availability." If murrelets commonly used this variety of nest structures, the potential nesting habitat would be significantly expanded. In other words, these nesting situations are considered atypical. The references provided do not indicate that murrelets have nested in anything but old growth in California.

Response to Comment SN-200.2
Please refer to response SN-200.1. Occurrence of murrelets in Mendocino County and in the vicinity of JDSF have been updated with the following information, and should have been added to the end of third paragraph on page 248 of the DEIR:

> Birds have also been detected at Alder Creek, Admiral Stanley State Park, Branscomb reserve, Big River, Greenwood Creek, Gualala River, and Garcia River (J. Stein pers. comm in K. Nelson's Comment dated July 15, 2002; comment SN-200). No specific information, such as observer, survey type, dates, numbers and type of detections, etc., was provided.

Response to Comment SN-200.3
Please refer to General Response 1.

Response to Comment 200.4 and 200.5
Please refer to General Response 5.

With regard to the comment, "***The environmental gradient from the wet on the west side to dry on the east side of JDSF makes the east side less favorable for murrelet nesting (hotter microclimate and fewer nesting opportunities, less substrate for nesting***)." Although this may be somewhat true from a climatic standpoint, the east side is still well within the known nesting range of the murrelet. Also, the majority of old-growth stands are in the northern and eastern portions of the forest (DEIR Figure H), and there tend to be more aggregations of old growth in the eastern portion of the Forest due to past harvesting practices. The development of habitat in the western portion of JDSF will take longer than it will in areas containing old-growth groves and aggregates. Much of the western and southern portions of JDSF are interspersed or adjacent to private in-holdings and urban development, and naturally fragmented by pygmy forests.

Response to Comment SN-200.6
Please refer to page 269 of the DEIR and General Response 1. The proposed management practices as described in the DFMP will protect existing murrelet habitat and lead to the development of additional murrelet habitat over time.

Response to Comment SN-200.7
Please refer to Response WW-237.2.

Response to Comment SN-200.8
Please refer to General Response 1.

Response to Comment SN-200.9
The proposed WLPZ of up to 150 feet extend to this distance on both sides of the creek which totals up to 300 feet not including the watercourse channel. In addition please refer to Responses WW-237.8 and RL-238.22.

Response to Comment SN-200.10
Although it has been demonstrated that corvid populations are greater in fragmented forests and in areas of human activities, murrelets are known to nest or at least showed occupied behaviors, under these circumstances at many of the parks located in northwestern California, most notably at nearby Russian Gulch State Park and also Prairie Creek Redwoods State Park, Redwood National Park, Humboldt Redwoods State Park, and Grizzly Creek Redwoods State Park. Numerous murrelets can be detected on any given morning in June and July at the main parking lot at Elk Prairie in Prairie Creek Redwoods State Park. This area receives numerous visitors every day of the summer. Recreational activities in an area do not preclude the area from being used by murrelets or from being considered as suitable habitat.

Response to Comment 200.11 and 200.12
As stated in the DEIR, murrelets have not been documented on JDSF. Surveys will be completed on a project basis were potential habitat would be affected. If occupied stands are

discovered, CDF will consult with DFG and appropriate mitigations will be developed. Also, please refer to General Response 1.

Response to Comment SN-200.13
Please refer to General Response 1.

Response to Comment SN-200.14
Please refer to Response WW-237.2.

Response to Comment SN-200.15
Please refer to General Response 1.

Response to Comment SN-200.16
Please refer to Response SN-200.1, WW-237.2, and General Response 2. No murrelets have been detected on JDSF, although two potential observations have been made.

Response to Comment SN-200.17
Please refer to General Response 1.

Response to Comment 200.18–200.20
Please refer to Responses WW-237.8, RL-238.22, and General Response 1.

Response to Comment 200.4 and 200.5
Please refer to General Response 5.

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Response to Comment SN-200.17
Please refer to General Response 1.

Response to Comment 200.18–200.20
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RS-201

July 16, 2002

Mr. Chris Rowney, Program Manager
Demonstration State Forests
California Department of Forestry
and Fire Protection
P.O. Box 944246
Sacramento, California 94244-2460

RECEIVED

Dear Mr. Rowney:

We are submitting the following comments on the Draft Jackson Demonstration Forest Management Plan and Environmental Impact Report based on our collective experience as Registered Professional Foresters who have a combined experience of 62 years of practice in the coastal redwood region. As foresters, but also as residents of the area, we believe strongly in the demonstration value of JDSF and cannot overemphasize its continued importance to the local economy.

Overall, we support the evolution of the 2002 Management Plan from the 1983 Management Plan, which generally focused far more on timber management than forest management. The practice of sustainable *forest management* recognizes the critical importance of non-timber values: wildlife, plants, aquatic resources, soil, recreation, and aesthetics. The new Plan has moved considerably in this direction.

Since its establishment in 1947, the managers of JDSF have taken largely cutover land and developed a forest with a greater volume per acre (43,000 mbf) than the vast majority of private or publicly managed lands in the region. We are particularly pleased to see that the Plan calls for a very sustainable level of harvest (15% of inventory over the next decade), which will continue to build inventory.

JDSF needs to be commended also for past research projects occurring on the forest. Of particular note are studies of direct relevance to timber management, including investigations into commercial and pre-commercial thinning, seedling survival, and the development of stocking guidelines for multi-aged coast redwood silviculture. We also are pleased to note the trend in expanding non-timber research, including studies of large woody debris in forest streams, the importance of legacy trees, impacts of timber harvesting on stand dynamics in riparian areas, and adaptive management monitoring of northern spotted owls.

Impressive work has been done by JDSF staff on introducing large woody debris in the Hare Creek Area, and we understand that the Forest has by far the largest on-going demonstration LWD projects anywhere in the state.

RECEIVED

Letter to Chris Rowney
July 16, 2002

Page 2

The following are some specific comments and recommendations aimed at improving the Plan and forest management on JDSF:

1

1) The standard data required in a Non-Industrial Timber Management Plan should be made available for each management compartment. This includes stand and harvest-growth tables, which are needed to understand forest structure on a decadal basis. Information on current volumes by compartment, what will be grown, and what will be harvested is not only fundamental for forest managers but for the public as well.

It should be noted that more information rather than less is important at this juncture to substantiate the JDSF position that it is managing on an ecosystem basis. Providing this data should not affect the flexibility that we recognize is needed for effective forest management.

2

2) All of us practice primarily uneven-aged silviculture, which generates substantial income on a regular, periodic basis for our clients. We recognize the value of demonstrating even-aged management on JDSF, but recommend that the Plan state that this approach be only used for demonstration purposes or for rehabilitation of hardwood-dominated stands to restore them to their original conifer or hardwood-conifer status. Generating income/harvesting large volumes should not be the justification for even-aged management on JDSF.

3

3) The Plan currently calls for foresters to supervise timber operations a minimum of once per week. On-site supervision is one element that contributes to excellent forest management. We recommend that this language be changed to a minimum of two times per week and more often if substantial volumes are being moved, e.g., 20 truck loads per day. It is also critically important that the same Registered Professional Forester be responsible for THP preparation, administration and monitoring.

4) It is our understanding that the current practice at JDSF is to have forestry aides mark timber. We recommend that professional foresters always be on-site with forestry aides. This approach may increase timber sale costs, but will ensure that silvicultural prescriptions for optimal stand development, wildlife habitat, riparian area protection and other objectives are met.

4

5) We think that the establishment of Forest Learning and Interpretive Centers is valuable and relevant. Given the increased interest in recreation at JDSF, the Interpretive Center can be a focal point for recreational activities and can also be used to educate people about sustainable forest management.

5

6) We recommend that the Plan include an objective to have JDSF management audited by a third party in order to have an objective assessment of its forest management and to restore public confidence.

Letter to Chris Rowney
July 16, 2002

Page 3

6 7) The Plan identifies the State Advisory Committee as the entity to provide advice on the selection of research projects. Both the Soquel State Forest and the Arcata City Forest have their own Advisory Committees that provide important input on all aspects of forest management. JDSF should have its own Advisory Committee, representing the various stakeholders. This Committee would provide important guidance and could assist JDSF managers in identifying community concerns.

7 8) There has been a high level of controversy associated with management of JDSF and its Plan. In addition, a considerable amount of misinformation has been publicized without an appropriate response by JDSF. We believe that JDSF's public educational and public relations efforts have been fundamentally inadequate. For whatever reason, the lack of an active informational outreach program and measured responses to public criticism have left the majority of the public believing that JDSF is poorly managed and cares little for anything but timber production. We note that JDSF currently has an education forester. He/she should actively meet with the local public and adjacent landowners, conduct tours, write articles in the local press, maintain a website, and provide outreach to demonstrate JDSF's ongoing management and research. We recognize that JDSF's educational program has been hampered due to the current lawsuit's effect on staffing. However, the problem existed prior to this situation.

8 9) In the section on "Public Concerns and Their Effect on Management," the Plan speaks to the issue of small-volume sales. We believe that the Plan should make a greater commitment to small volume sales and that the California Department of Forestry should recognize the clear benefits of this approach over its additional costs. Increasing the allotment of small volume sales would be a much better means of meeting JDSF's goal of supporting the local economy, as small operators can bid on those sales.

Timber sales might be evenly distributed in the following manner: one-third of annual harvest in sales of less than 500 mbf; one-third greater than 500 mbf and less than 1 mmbf; one third greater than 1 mmbf.

Using this approach, JDSF would be not only providing smaller operators with essential income, but training that could promote lower impact logging practices outside the Forest.

9 10) The Plan addresses the significance of aesthetics next to residential landowners and recreational areas. It is our belief that JDSF would see a considerable reduction in complaints about timber harvesting if greater aesthetic standards were adopted in harvest plans. These include, but are not limited to: a) more attention to cleaning landings and seeding them at the close of operations; b) lopping slash in areas that are visible to the public; c) removing burn piles in a timely fashion; d) mulching areas with visibly exposed soil.

Letter to Chris Rowney
July 16, 2002

Page 4

Based on our experience, the additional cost of these standards is between $10-$20/mbf and is a wise investment.

10 11) The Plan calls for a full-time forest wildlife biologist, which we endorse. It is critical to select a person who understands both biology and forest management. In addition, we recommend that this person be a senior member of the JDSF management team in order to ensure that his/her recommendations are given equal consideration in planning and implementation. Further, the biologist should focus primarily on non-regulatory matters.

11 12) We do not endorse an inflexible buffer along watercourses, but find that more attention needs to be made in the Plan to standards along Class III watercourses. In areas that have highly-erodible soils and steep slopes, where active down cutting is evidenced, and at headwater slopes, Class III watercourse management should be addressed. It should be noted that both the Aracata City Forest and Mendocino Redwood Company have increased their standards to protect Class III watercourse ecological values.

In Class I and II WLPZs, flexibility should be provided to allow harvesting to create late seral conditions, especially in young, dense homogeneous stands where windfalls for Large Woody Debris may not occur for hundreds of years.

12 13) Both non-industrial and industrial foresters and landowners have a critical need for yield tables for uneven-aged management. We recommend that this be a high priority for future research at JDSF.

We appreciate the opportunity to provide these comments and recommendations and hope that they prove to be of assistance. We look forward to a response from JDSF and would welcome an opportunity to talk with staff.

Sincerely,

Roger Sternberg, RPF# 2620

Nick Kent, RPF #2418

Darcie Mahoney, RPF# 2397

Craig Blencowe, RPF # 2003

Letter RS-201

Response to Comment 201.1
The level of detail presented in the DEIR, as well as the DFMP and Alternative "A," is appropriate for the program level DEIR completed for the DFMP. Please refer to Response VT-241.1 for more information relating to CEQA requirements for the level of detail that is appropriate for a program EIR. The type of information requested in the comment is more appropriate to provide on a project level analysis such as a THP or NTMP.

Providing the level of detail requested is not reasonable given the size of JDSF and the policy level direction provided in the DFMP. The management compartments currently delineated on the Forest are broad areas identified for the silvicultural allocation plan. Not all of the compartments are included in the short term harvest schedule, and it is not known at this time which compartments may be scheduled for harvest plans in that time frame. Furthermore, actual harvest area boundaries, yarding methods, specific silvicultural treatments, among other details, will be determined after site specific evaluation by resource professionals. Presenting specific information at the management compartment level would not provide for a more meaningful analysis of the proposed project due to these uncertainties. Further segregation into smaller compartments would be highly speculative at this time.

Also, please refer to General Response 1.

Response to Comment 201.2
Please refer to General Response 1 and Response RS-201.1. The DFMP and DEIR explicitly discuss management regimes for second-growth stands. A detailed silvicultural allocation plan is provided and analyzed. The second growth stands will be managed to achieve the desired future conditions as described in the DFMP.

Response to Comment 201.3
Please refer to General Response 1 and 2.

Response to Comment 201.4
The DFMP includes provisions to collaborate between JDSF and outside agencies and groups by establishing a Forest Learning Center and an Interpretive Center. The Center would be utilized to educate people about ongoing research that is conducted within JDSF and can be found on pages 12 and 32 of the DEIR.

Response to Comment 201.5
This comment refers to a need for JDSF management to be audited by non-CDF personnel. The DFMP provides for periodic monitoring to evaluate progress toward the stated goals in the DFMP. In the case that monitoring results indicate that resource conditions have deviated from the desired trajectory or new policies have been put in place, which may require modification of management regimes, provisions for adaptive management are provided to ensure flexibility of the DFMP (DEIR pages 12 and 32). Also, please refer to General Response 1.

Response to Comment 201.6
The Commenter would like JDSF to have its own Advisory Committee composed of various stakeholders, rather than rely on the State Advisory Committee. The DFMP does not establish a formal mechanism by which to form an Advisory Committee specific for JDSF. Input from interested organizations, both public and private, regarding future CEQA review for individual projects will continue to be received by CDF. The State Forest Advisory Committee may provide an additional means of input for these organizations (DFMP, p. 62). The Committee provides overview and assists in the identification and prioritization of research and demonstration projects, as well as advice on a host of other potential issues. The Committee is appointed by and serves at the pleasure of the Director of CDF and provides a source of counsel on specific issues brought to the Committee by the Director or staff on behalf of the Director. The Committee represents the entire State Forest system, with individual members of the Committee representing areas located near specific Demonstration State Forests.

Research and demonstration needs and priorities for JDSF are identified in the DFMP on page 96. As stated "With potentially conflicting demands for research and demonstration, a process for identification of needs, prioritization, and allocation of funding is necessary. An advisory committee appointed by the Director of Forestry and Fire Protection will provide overview and assist in the identification and prioritization of research and demonstration projects in order to provide appropriate representation for the public, timberland owners, resource professionals, educational institutions, state and local government, and state forest management staff.

State Forest staff has formulated a series of questions designed to establish the relevancy and priority for proposals suggested by staff or received from other sources. Based on this series of questions, the Forest staff has identified a number of research priorities for the planning period that will be considered together with priorities identified by other sources. Also, please refer to General Response 1 and 2.

Response to Comment 201.7
Future public education and outreach programs that demonstrate ongoing research and management at JDSF are included as provisions in the DFMP and DEIR (DEIR page 11). The DFMP includes a discussion regarding future planning, research, and demonstration and includes potential additions such as a Forest Learning Center, JDSF Interpretive Center, State Forest Data Bank, public and professional education, cooperatives, publications, symposiums, tours, Internet Web Page, and demonstrations.

Response to Comment 201.8
The Desired Future Conditions and Planned Management Chapter of the DFMP include a discussion regarding the timber sale program on JDSF (DFMP, pages 57-58). It states:
"The majority of timber harvesting operations will continue to be conducted through the same type of timber sale program that has been in place for the past 40 years, as described in Chapter 2. Typically, one Timber Harvesting Plan will be prepared for each timber sale. Sizes of individual sales will normally fall between about five million and ten million board feet,

although sale-specific requirements may result in occasional sales as small as one or two million board feet or as large as 15 million board feet.
The Forest will pursue opportunities to market small blocks of timber to individuals, small businesses, and other non-traditional timber purchasers. The timber sale staff will investigate the possibility of either targeting small sales to registered small businesses, or giving registered small businesses a preferential allowance in the bid award process.

Also, please refer to General Responses 1 and 2.

Response to Comment 201.9
Each timber harvest plan includes an assessment of potential environmental impacts, both individual and cumulative. Aesthetic considerations are included in the assessment. The degree of attention and mitigation provided for aesthetic considerations varies according to the location of the harvest, specific provisions of the harvest, and the amount and type of exposure to the public. It is CDF's intent to mitigate aesthetic impacts to a level that is less than significant while maintaining scenic qualities in areas with significant public use. The suggested measures (above) will be considered on a site-specific basis depending upon anticipated conditions.

Please refer to General Response 1 and Response F8.8.

Response to Comment 201.10
Comment regarding the request that the future JDSF wildlife biologist should focus on non-regulatory matters has been noted. Please refer to General Response 1.

Response to Comment 201.11
Please refer to Response F3.4 and Response PS-2.5.

Response to Comment 201.12
Research and demonstration needs and priorities for JDSF are identified in the DFMP (page 96). This discussion includes recommendations for topics that have higher priority and include the following recommendations:

- Growth Modeling of Redwood Forest types - Young Tree.
- Demonstration of Sustained Un-even aged Forestry.
- Spatial Dynamics of Stand Structure.
- Documentation and Synthesis of Existing Information on Coast Redwood Forests.

Yield tables developed for uneven-aged management would begin with the research needs already identified. The procedures for initiating these projects are identified in the DFMP (pages 91-92). Also, please refer to General Response 1.

GK-215

Chris Rowney, Program Manager
Demonstration State Forests
California Department of Forestry
Post Office Box 944246
Sacramento, CA 94244-2460

July 16, 2002

Dear Mr. Rowney:

I and my family frequently recreate in Jackson State Forest (JSF) and the surrounding area and we are concerned about the Forest Management Plan and DEIR that your department has prepared for JSF. JSF is truly a unique state resource that should be managed more judiciously by CDF for its long-term environmental preservation. After reading the DEIR, I believe the report does not adequately identify important environmental management issues relevant to the long-term preservation of the forest, let alone unique species and other non-forest resources of JSF. Specifically, the proposed stream buffers are less than those recommended by the US Forest Service for this region. Streams are an important regulator of ecological processes that effect tree growth and should be preserved for the long-term health of the redwoods of JSF. I ask you to reconsider the stream buffer policy set forth in the Forest Management Plan and adopt the guidelines recommended by the US Forest Service. 1

While the management of California's forest resources is clearly your primary mission, I ask you to consider another important role that JSF provides – namely serving as a large relatively undisturbed, publicly accessible redwood tract that is within a half-day's drive of large population centers. Such forests need to be maintained so that visitors can see the unique habitat that such forests provide. Humboldt State Park and Redwood National Park are two such examples but clearly require a greater effort for most Californians to experience. JSF is the largest public redwood stand close to the Bay area and Central Valley and should be managed for the visitation of large numbers of Californians. 2

I ask you to reject the JSF Forest Management Plan as currently proposed and strictly curtail private logging in JSF.

Sincerely,

Garrett Keating

Garrett Keating
148 Ricardo Avenue
Piedmont, CA 94611

JUL 18 2002

Letter GK-215

Response to Comment 215.1
Please refer to Responses F3.4, PS-2.5, and General Response 1.

Response to Comments 215.2
The DEIR contains extensive discussions regarding JDSF's recreation opportunities, management, and future goals. Please refer to the Recreation Section of the DEIR for general analysis of the DFMP proposed management of recreation areas. Also, please refer to General Response 1.

GJ-236

California Native Plant Society, Forestry Program

Date: July 17, 2002

To: Christopher Rowney
California Department of Forestry and Fire Protection (CDF)
P.O. Box 944246
Sacramento, CA 94244-2460

JUL 1 8 2002

From: Gregory A. Jirak
California Native Plant Society (CNPS) Forestry Program Coordinator

Subject: Comments on the "*Draft Environmental Impact Report For the Comprehensive Update to the Jackson Demonstration State Forest Draft Management Plan*", May, 2002, (DEIR) and the "*Jackson Demonstration State Forest Management Plan, Draft*", May 17, 2002, (DMP) both by the California Department of Forestry and Fire Protection (collectively, the "Project")

Introduction

This document constitutes the California Native Plant Society Forestry Program's (CNPS) comments on the Project.

CNPS respectfully requests that CDF make this document, and all documents referenced herein, part of the administrative record for the Project.

Issues

1. **Native Plant Protection Act (NPPA)**

CNPS takes strong exception to the characterization of the NPPA in the DEIR[1], and feels that there is strong case law to show that this position is legally unsupportable. It is CNPS's position that the salvage exemptions contained in the NPPA apply only to taxa state listed as rare, and that the salvage provisions apply *only after* compliance with all provisions of the California Environmental Quality Act (CEQA).

In accordance with CNPS's position, the California Attorney General's office (AG) is currently actively defending the California State Board of Forestry (BOF) in a lawsuit regarding this exact point of law.[2] It is inappropriate for CDF to take a position in the DEIR that is directly contrary to the position of the BOF and the AG on this issue.

Accordingly, CNPS respectfully requests that this section be removed from the DEIR

[1] DEIR, p. 140.

[2] Donald H. Weburg v. State Board of Forestry and Fire Protection, case number 02-CS00204, filed in the Sacramento County Superior Court on 4/2/02.

Gregory A. Jirak • CNPS Forestry Program Coordinator
265 Main St., Suite 201 • PO Box 985 • Point Arena, CA. 95468
Forestry@CNPS.org • 707.882.1660 (V) • 707.882.1661 (F)

before preparation of the final EIR.

2. **Insufficient Guidelines for Botanical Surveys**

It is CNPS's opinion that the guidelines for botanical surveys provided in the DMP are not sufficient.[3] At a minimum, botanical surveys performed for each timber harvest plan (THP) must conform to the guidelines specified by the California Department of Fish and Game (DFG)[4,5] and CDF.[6] However, since JDSF is a research and demonstration forest, it seems appropriate for the DMP to comply with the more rigorous botanical survey guidelines promulgated by CNPS.[7]

4 It should be noted that both the DFG and CNPS guidelines require a complete *floristic* survey prior to commencement of operations. Surveys for only a set of sensitive taxa are not acceptable.

The DMP should be modified to specifically require all THPs on JDSF to comply with the CDF guidelines, and at least the DFG guidelines, but preferably the CNPS Guidelines instead.

3. **Insufficient and Incorrect Botanical Information for JDSF**

It appears to CNPS that the state of botanical knowledge on JDSF is inadequate to support non-damaging management of sensitive botanical taxa. Indeed, in the DMP, CDF acknowledges that for most of the taxa potentially occurring on JDSF that current population status is uncertain, but presumed declining, and that further study is needed for 5 adequate conservation management.[8] However, neither the DEIR nor the DMP proposes a formal program of study to provide the information required for adequate conservation management.

Additionally, the information presented in the DMP is not completely consistent. For example, in several places, the Plan claims that there are six sensitive plant taxa occurring on JDSF.[9] However, examination of DEIR Appendix 8-D-3 shows CDF instead claiming 6 that nine sensitive plant taxa occur on JDSF. Additionally, other sensitive plant taxa, not listed in the DMP, are known to occur on JDSF, including *Lycopodium clavatum*.[10] However, *L. clavatum* is listed as "likely" in DEIR Appendix 8D-3, instead of "known".

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[3] DMP, p. 69.

[4] "*Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities*", 5/8/00, California Department of Fish and Game, Sacramento, California.

[5] Interestingly, the CDF botanical survey guidelines are included as unnumbered pages in the Appendix to the DEIR, but CNPS was unable to find any reference to these guidelines in the DEIR, or any requirement that these guidelines actually be used.

[6] "*CDF Guidelines for Species Surveys and Mitigations*", 7/2/99, memorandum from Andrea Tuttle, Director of the California Department of Forestry and Fire Protection, Sacramento, California.

[7] "*CNPS Botanical Survey Guidelines*", 6/2/01, California Native Plant Society, Sacramento, California.

[8] DEIR, Appendix 8-D-1.

[9] E.g., DEIR, p. 143, and DMP, p. 62.

[10] One population of *L. clavatum* was shown to the 2002 spring semester Biology 99 class from College of the Redwoods by a CDF employee, who claimed that there was another known population on JDSF.

Further, some botanical information is inaccurate, and seems to reflect a lack of site-specific knowledge. For example, DEIR Appendix 8-D-3 states that it is unlikely that *Erigeron supplex* will occur on JDSF. However populations of *E. supplex* occur on habitat similar to that contained in JDSF[11], so this taxa should be listed as "watch for" instead of "unlikely". 7

It is also CNPS's understanding that CDF has not compiled a flora, or even a plant list, for JDSF, so CDF really has no idea of the floristic composition of JDSF.[12] 8

In order to carry out adaptive management, a research and demonstration forest should have a comprehensive floristic baseline against which the effects of management can be compared. Without such baseline data, CNPS does not understand how CDF proposes to provide adequate monitoring of the floristic state of JDSF. 9

To properly disclose the Project's impacts on botanical resources[13], to propose appropriate mitigation measures,[14] and to adequately address cumulative impacts[15], CNPS believes that the botanical work in the DEIR and DMP needs to be redone so that it is internally consistent, accurate, and reflects local, site-specific information. 10

Further, CNPS feels that the DMP must be modified to include a program to compile a comprehensive flora for JDSF. This program should include compilation of the results of all botanical surveys performed for THPs on JDSF, and should include additional floristic surveys for those areas not currently subject to timber harvesting so that a floristic baseline can be completed within the next five years. 11

CNPS also believes that the DMP must be modified to require California Natural Diversity Database (CNDDB) field survey forms to be submitted in accordance with the DFG botanical survey guidelines. 12

Since the DEIR fails to propose a concrete program to develop the data needed to adequately manage the sensitive botanical taxa on JDSF, the DEIR should not be certified until this omission is remedied. 13

4. Inadequate Staffing and Funding

Even though JDSF is touted as a research and demonstration forest, JDSF currently has no on-site botanical staff[16] (in fact, except for a ½ time geologist, JDSF has *no* science staff whatsoever.) Despite the DMP claiming that, "In assessing needs for the coming decade, greater biological expertise appears to be the highest priority"[17], no botanical 14

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[11] Personal field observations of author confirmed by local CNPS rare plant coordinator.

[12] Personal communication with a CDF employee during the 2002 spring semester Biology 99 class from College of the Redwoods.

[13] As required by §15002 and §15126 of the CEQA Guidelines.

[14] As required by §15126(c) of the CEQA Guidelines.

[15] As required by §15130 of the CEQA Guidelines

[16] DMP, p. 40.

[17] DMP, p. 86.

staffing is proposed in the DMP.[18]

15 The DMP also states that, "Resources available for monitoring are limited whereas the need for monitoring is infinite."[19] The Plan's adaptive management program depends on adequate funding and staffing to provide monitoring sufficient to detect changes in the forest.

16 According to the DMP, the current annual operating budget for JDSF is approximately $2,400,000[20]:

Budget Item	Amount
Personnel	$1,400,000
Operations	$170,000
Road Management Program	$300,000
Timber Stand Improvement	$150,000
Research, Demonstration, and Monitoring	$375,000
Total	$2,395,000

The DMP states that the current annual stumpage value is approximately $14,500,000[21]. This means that JDSF's expenses are less than 17% of its revenues.

Given this extraordinarily low rate of reinvestment in JDSF, it seems unconscionable that JDSF lacks a botanist and/or ecologist and the funds needed to do proper monitoring.

17 CNPS believes that a portion of the substantial revenues derived from JDSF timber harvests should be returned to JDSF in the form of scientific staff capable of actually implementing the DMP.

18 Since adaptive management is one of the proposed mitigation measures for impacts to botanical resources, and since adaptive management will not be effective without adequate staffing and funding, CNPS believes that the DEIR and DMP must be revised to ensure that such staffing and funding will be available to implement the proposed mitigation measures.[22]

5. Inadequate Adaptive Management of Plant Resources

19 The DMP's goal to "protect and restore the diversity of plant species across the forest"[23], is laudable, but limited. Modern ecological thinking shows the folly of trying to preserve individual taxa in isolation. Indeed recent legislation[24] attempts to codify this modern

[18] DMP, p. 86.

[19] DMP, p 100.

[20] DMP, pp. 40-41. Assumes that JDSF gets one half of the $750,000 allocated among all state forests for research demonstration and monitoring.

[21] DMP, p 26

[22] CEQA Guidelines §15126(c).

[23] DMP, p. 107.

[24] Senate bill 107, Natural Community Conservation Planning Act, approved by the Governor February 2, 2002. Filed with Secretary of State February 4, 2002.

approach to conservation. Since JDSF claims to be dedicated to demonstrating innovative forest management, then it seems that JDSF should adopt a more progressive goal which includes preservation and restoration of intact, functioning native ecosystems.

However, CNPS is seriously concerned about the proposed activities proposed by the DMP to achieve its stated adaptive management goal for plant resources.[25]

First, given the lack of resources reflected in the DMP, CNPS does not believe that CDF will be able to adequately "develop and implement a training program to assist personnel in sensitive plant identification and habitat requirements on an as needed basis."[26] Further, CNPS sees the following significant problems with this approach:

a. CDF does not have the botanically skilled personnel to perform such development and implementation. CDF should instead make use of the already qualified botanical staff at College of the Redwoods in Fort Bragg, California to provide any such training.

b. Informal training is inadequate to qualify CDF personnel to conduct plant surveys pursuant to DFG or CNPS guidelines.

c. The DFG and CNPS guidelines require *floristic* surveys, not simply surveys for sensitive species.

d. It is almost certain to be more effective and efficient to hire already qualified botanical staff for JDSF than to retrain existing staff.

e. Botanical expertise is needed continuously, on an ongoing basis. In this context, "as needed" means continuously.

Second, as noted previously, there exists no baseline data for botanical resources on JDSF. Lacking baseline data regarding sensitive plant distribution, population size, habitat quality, etc. means that adaptive management will be significantly compromised.

Third, as noted in the DEIR[27], management information for sensitive species is typically minimal or completely lacking. The DMP makes no mention of carrying out controlled experiments to develop this management information.

Accordingly, CNPS believes that:

a. Qualified full-time botanical and ecological staff must be hired for JDSF. This will take only a tiny portion of the significant revenues being extracted from JDSF.

b. A comprehensive floristic survey of JDSF must be completed within five years to provide baseline data for future adaptive management.

c. A program of scientifically controlled experiments must be conducted to develop management information for sensitive species found on JDSF. These experiments

[25] DMP, p. 107.

[26] DMP, p. 107.

[27] In the species descriptions of DEIR Appendix 8D-1.

should initially focus on taxa which most immediately impact timber harvesting, such as *Sidalcea malachroides* and *Astragalus agnicidus*.

Unless these modifications are made to the DMP, then CNPS feels that adaptive management stands little chance of achieving the currently stated goal, much less the more ambitious goal that properly should be achieved for a research and demonstration forest. Since adaptive management is a significant mitigation measure for botanical resources, the DEIR must be considered deficient unless the DMP ensures the success of adaptive management.[28]

6. **Erroneous Analysis of Habitat**

The DEIR states that, "A total of 18 vertebrate and 6 plant species of concern currently occur … on Jackson Demonstration State Forest, and are considered specifically in the management plan (Table 1). Other species of concern are present within the vicinity of Jackson Demonstration State Forest. Due to the lack of habitat elements used by these species …, occurrence in anything other than a transitory nature is a low probability."[29]

CNPS believes this is a categorically false statement with regard to plant taxa. Indeed, CNPS thinks it quite likely that JDSF contains habitat suitable for sensitive plant taxa in addition to the six contained in Table 1. In fact, elsewhere the DEIR[30] appears to contradict this statement.

7. **Erroneous Information Regarding *Astragalus agnicidus***

The DEIR claims that "… since 1998 CNPS has taken over the coordination of monitoring and protection activities [for *A. agnicidus*]."[31] This statement is false. CNPS did provide some monitoring a few years back for one population of *A. agnicidus* in Humboldt County. However, CNPS has done no other formal monitoring of *A. agnicidus* for any other population. Further, CNPS has no authority to "protect" *A. agnicidus*.

8. **Demonstration of Even-Aged Management**

The DMP states, "Even-aged management is widely used and is a viable method of timber harvesting when utilized properly…"[32] From this statement, it is unclear why even-aged management should continue to be practiced on JDSF, given that it was established "… because of the need to demonstrate responsible and innovative forest management practices."[33]

If a silvicultural prescription is "widely use and is a viable method", then it can no longer be considered "innovative". Further, even-aged management radically alters the local environment in ways that are not necessarily the same as natural disturbance. Soil and air temperature and water content are drastically reduced, and invasive exotics often flourish

[28] CEQA Guidelines §15126(c).

[29] DEIR, p. 17.

[30] DEIR, pp. 137-139, and DEIR Appendix pp. 8D-3-1 to 8D-3-3.

[31] DEIR, Appendix 8-D-1, p. 8D-1-2.

[32] DEIR, p. 6.

[33] DMP, p. 1.

following even-aged management.

It is CNPS's opinion that even-aged management no longer needs to be demonstrated on JDSF, and that, as noted below, other research and demonstration needs are more pressing.

9. **Incomplete Research and Demonstration Program**

CNPS feels that the proposed program of research and demonstration fails to mention some significant projects for which JDSF is uniquely suited:

a. **Impact of increasing regulation** – It is quite likely that additional regulations will be placed on timber harvesting, e.g., more stringent watercourse protection rules, during the term of the Project. Whenever additional regulations are debated, economic considerations are often posited.

Given JDSF's stated mission to provide innovative information for timber management, it seems to CNPS that JDSF should undertake projects to evaluate how increased regulation of timber harvesting will actually affect the economics of timber harvesting, and to develop techniques for dealing with such increasing regulation effectively.

b. **Impact of newly listed taxa** – It is quite likely that additional botanical taxa will become state or federally listed during the term of the project. In fact, the forests of northern California are facing the disaster of Sudden Oak Death (SOD), caused by *Phytophthora ramorum*. SOD could potentially drive certain taxa, currently common in the forest, such as *Lithocarpus densiflora* (tanbark oak) to the brink of extinction in a relatively short period of time. Most ericaceous taxa may face a similarly bleak future.

It seems to CNPS that JDSF should begin immediately to examine how timber harvesting will be affected when plants such as *L. densiflora* become state or federally listed. Such listing could cause a "train wreck" for timber harvesting, and research conducted soon on JDSF could help deal with the disaster looming down the road.

c. **Management of sensitive taxa** – As mentioned previously, few, if any sensitive plant taxa have adequate management information. JDSF is in a unique position to carry out controlled experiments on management of sensitive plant taxa.

d. **Management of exotic taxa** – Given the significant problem of invasive exotics, and the significant likelihood that additional herbicide regulations will be enacted during the term of the Project, JDSF should conduct research into silvicultural prescriptions, equipment management, and other exotic control technologies that can be effectively used to combat invasive exotics in the north coast forests.

CNPS feels that a small portion of the significant cash flow thrown off by JDSF timber harvesting should be reinvested in these research projects. These projects will benefit both the environment and the timber industry, and can be funded easily from income derived from the forest.

It should be recognized that the DMP proposes a relatively ambitious set of future

conditions. However, these future conditions will *not* be achieved unless funding is committed to achieving them. Neither the DMP, nor the DEIR, make any such commitment. Accordingly, it seems to CNPS that the DMP and DEIR must be revised to reflect future conditions which can be achieved with the funding level to which CDF is actually willing commit in the DMP and DEIR.

10. Use of Herbicides

According to the DEIR, "CDF believes that … when properly applied, herbicides do not present a threat to the environment or to human health."[34]

However, the state of herbicide research is developing rapidly, and seems to contradict this statement. For example, recent research at the University of California at Berkeley demonstrated that atrazine disrupts sexual development of frogs at concentrations thirty times lower than the levels allowed by the United States Environmental Protection Agency.[35] This appears to imply that what is currently considered "proper" application of atrazine does, in fact, harm the environment.

Statewide, CNPS is concerned about herbicide application following logging operations. Herbicides are often applied *after* a THP is closed, and CNPS has found it applied to sensitive botanical taxa, killing them. In such cases, the herbicide is applied in accordance with labeling guidelines, but the end result is damaging to the environment.

CDF claims that it has no authority over such applications, since the application is done after the THP closes. CNPS believes this to be illegal CEQA piecemealing, and believes that CDF must address herbicide impacts, including cumulative impacts, as part of the THP process.

It is CNPS's understanding that even-aged silvicultural prescriptions, e.g., clear-cutting, require more herbicide use than un-even aged management. There also appears to be evidence that conifer release by herbicides is primarily beneficial for short rotation periods, and that for longer rotation periods, native shrubs appear to enhance soil productivity. Thus, longer rotation periods appear to reduce the need for application of herbicides and artificial fertilizers.

Since JDSF is a research and demonstration forest, it seems to CNPS that JDSF could properly be used to research and demonstrate economic timber technology that avoids use of herbicides. Since it is not unreasonable to think that there will be increasing regulation of herbicides over the life of the DMP, JDSF could be used to investigate how to effectively cope with such increased regulation. However, nothing in the DEIR nor the DMP indicates that such projects are part of the Plan.

11. Management of Exotic Species

CNPS commends CDF for aggressively addressing the problem of invasive exotics, since invasive exotics are second only to development in contributing to the loss of habitat for

[34] DEIR, p. 6.

[35] "*Popular weed killer demasculinizes frogs, disrupts their sexual development, UC Berkeley study shows*", Saunders R., April 4, 2002, press release from University of California at Berkeley.

native species. While CNPS agrees with the actions planned for control of exotic species, CNPS has the following concerns:

a. The DMP fails to discuss how different silvicultural prescriptions affect recruitment of invasive exotics. Since exotics are such a problem, it seems to CNPS that JDSF should investigate the relationship between silvicultural prescription and subsequent invasion by exotics.

40 b. The DMP fails to discuss equipment management techniques that can be used to minimize spread of exotics.

c. Instead of recommending that CDF implement a staff training program for invasive exotics[36], CDF should work cooperatively with The College of the Redwoods in Fort Bragg to develop such a program that would then be available to all, including the public and the private timber industry.

12. Inadequate Protection for Plant Species of Concern

41 When discussing the desired future conditions and planned management regarding protection for plant species of concern, the DMP proposes a deficient survey methodology.[37]

42 Instead of that proposed, the DMP should be revised to simply state that *all* botanical surveys will comply with the CDF guidelines, and the DFG, or preferably the CNPS, guidelines for botanical surveys.

43 Since the DMP proposes, in this same section, no protection other than surveys[38], this section should be modified to state that, at a minimum, botanical resources will be managed based upon the best available then current science.

CNPS is unconvinced that the mitigation measures proposed for plant species of concern are adequate.[39]

13. Rolling Five-Year Harvest Schedule Ignores Botanical Resources

The discussion of the rolling five-year harvest schedule fails to discuss botanical resources. At a minimum, planning for the five-year harvest schedule should:

a. Consider survey requirements for biennial plants, and make sure that botanical surveys are conducted when, and as frequently, as required.

44 b. Consider the impact on herbaceous understory. Recent studies indicate that inappropriate reentry can cause decline or extirpation of certain understory taxa.

c. Consider edge effects on recovery of botanical resources. Silvicultural prescription, size of even-aged management units, and rotation period can all negatively impact botanical resources. Good planning can minimize these

[36] DMP, p. 59.
[37] DMP p. 63.
[38] DMP, p. 63.
[39] CEQA Guidelines §15126(c).

impacts.

CNPS encourages CDF to use the rolling five-year harvest schedule to help minimize negative impacts to the botanical resources of JDSF. Without such consideration, it is unclear that mitigation measures for sensitive botanical taxa will be effective.[40]

14. Timber Supply

The DEIR states that, "The level of harvest will be determined by the biological capacity of the Forest, in consideration of all applicable constraints."[41] As mentioned previously, and as acknowledged by CDF in the DEIR[42], the state of botanical knowledge on JDSF is currently insufficient for "adequate conservation management."[43]

Accordingly, at this time, it is impossible to know the biological capacity of the forest, at least with respect to sensitive plant taxa. This problem reinforces the need to promptly complete a baseline floristic survey of JDSF so as to avoid unforeseen, unintended cumulative impacts to botanical resources on JDSF.

15. Linkage Between Ecosystem Management and THPs

The DMP proposes an ambitious approach to ecosystem management.[44] However, timber harvesting on JDSF will be conducted pursuant to individual THPs. It is unclear from the DMP and the DEIR how the overall implementation of the proposed ecosystem management plan will be accomplished through THPs.

The DMP should be revised to clearly enunciate how the proposed ecosystem management will be effectively implemented by a set of individual THPs executed over time. The cumulative impacts analysis of each such THP needs to consistently show how such THP contributes to implementation of the DMP's ecosystem management plan.

Without such linkage between the DEIR/DMP and individual THPs, CNPS believes that ecosystem management as a mitigation measure will be significantly compromised[45], and that the cumulative impact analysis for the DEIR will be invalid.[46]

16. State Parks

The DEIR seems to use adjacent State Park units as mitigation for continued timber harvesting on JDSF. However, Russian Gulch State Park is 1,304 acres, not all, but most of which is forest, Jughandle State Park is 778 acres, much of which is coastal headlands and the remaining pygmy forest, and Mendocino Woodlands is 720 acres, nearly all is redwood/fir forest. Thus, only about 2,000 acres of non-pygmy forest occur in the state park lands adjacent to JDSF. It seems unreasonable to claim that an area only 2% the size

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[40] CEQA Guidelines §15126(c).

[41] DMP, p. 31.

[42] DEIR Appendix 8D-1.

[43] Noted on many sensitive species descriptions in DEIR Appendix 8D-1.

[44] DMP, pp. 42-45.

[45] CEQA Guidelines §15126(c).

[46] CEQA Guidelines §15130.

of JDSF is appropriate mitigation for loss of late seral stage habitat on JDSF.

17. Inadequate Project Description

The DEIR states, "The Board … may select a management strategy that differs from the one presented in the DFMP. The final Management Plan may incorporate elements from several alternatives."[47] CNPS believes that this statement significantly compromises adequate description of the Project.[48] If the selected management strategy differs from that proposed in the DMP, or if some new alternative is synthesized from other alternatives, then CNPS believes that the DEIR will fail to adequately disclose to the public the potential environmental impacts and corresponding mitigation measures.[49]

Should CDF decide on a management strategy other than that proposed in the DMP, or select an alternative other than one explicitly discussed in the DEIR, CNPS feels that the revised DEIR and DMP must be resubmitted for public review and comment.

18. Potential Conflict of Interest

Since the applicant, CDF, is also the lead agency, it is important that the Plan be as objective as possible[50], and should avoid even the hint of additional conflict of interest. However, the DEIR was prepared by Natural Resource Management Corporation (NRM), whose president is Gary C. Rynearson, who is also a member of the California Board of Forestry (BOF). Since the BOF will approve the DMP, it appears to CNPS that there is, at least the appearance of, a conflict of interest that may compromise the objectivity of the Plan.

19. Excessive DEIR Length

The CEQA Guidelines state, "The text of draft EIRs should normally be less than 150 pages and for proposals of unusual scope or complexity should normally be less than 300 pages." However, Volume 1 of the DEIR is 430 pages plus 15 pages of maps. Thus, the DEIR is 50% longer than that recommended by the CEQA Guidelines.

Since there are numerous redundancies and repetitive recitation regarding botanical resources throughout the Plan, it appears to CNPS that CDF did not comply with the intent of the CEQA Guidelines to "… reduce unneeded bulk in EIRs and to help the documents disclose the key environmental issues…" Instead, the sheer bulk of the Plan, makes it difficult for the public to identify these issues and evaluate how the Plan deals with them.

CNPS encourages CDF to eliminate redundancies and repetitive recitation regarding botanical resources in the revised DEIR and DMP.

20. Inadequate Distribution of the DEIR

The CEQA Guidelines require that the "… Lead Agencies should furnish copies of draft

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[47] DEIR, p. 4.

[48] Contrary to CEQA Guidelines §15124.

[49] Contrary to CEQA Guidelines §15126.

[50] CEQA Guidelines §15084(e).

EIRs to public library systems serving the area involved."[51]

However, at a minimum, CDF did not furnish copies to the Coast Community Library in
57 Point Arena, or to the Mendocino Library in Mendocino.

Summary

CNPS feels that the DEIR and DMP are significantly deficient in the following ways:

a. **Contradictory NPPA Stance** – The DEIR proposes an interpretation of the NPPA that is at odds with the BOF's and AG's defense of the Weburg litigation. This defense promulgates the well-established notion of harmonizing CEQA with NPPA.

b. **Insufficient Disclosure of Impacts to Botanical Resources** – The botanical work in the DEIR appears to have been hurriedly compiled, and contains numerous inconsistencies and errors. It lacks site-specific information, and acknowledges the profound lack of baseline data regarding botanical resource population status and distribution.

c. **Insufficient Information Regarding Management of Sensitive Botanical Taxa** – The botanical work in the DEIR acknowledges that for many such taxa insufficient information exists to propose adequate conservation management.

d. **Insufficient Discussion of Cumulative Impacts** – No baseline data exists for botanical resources on JDSF. Lacking such baseline data, it is difficult to properly discuss the cumulative impacts on botanical resources. The DEIR also fails to discuss the cumulative impact of herbicide application on JDSF.

e. **Insufficient Mitigation of Impacts to Botanical Resources** – The mitigation measures proposed in the DEIR for botanical resources depend crucially upon adequate staffing and funding to implement, but such resources are not committed in the DEIR.

f. **Insufficient Botanical Survey Guidelines** – The DEIR and DMP fail to explicitly require conformance with CDF and DFG botanical survey guidelines.

CNPS recommends that CDF revise the DEIR and DMP to address these concerns, then resubmit the DEIR and DMP for public review and comment.

Sincerely,

Gregory A. Jirak, CNPS Forestry Program Coordinator

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[51] CEQA Guidelines §15087(e).

Letter GJ-236 (California Native Plant Society, CNPS)

Response to Comment 236.1
Additional protection for rare, threatened and endangered plants are provided by the California Endangered Species Act (Fish and Game Code §§2050 ***et seq.***), the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 ***et seq.***), and the California Environmental Quality Act. CDF believes that the protection for plant described in the Management Plan and this EIR meet the requirements of all these statutes. Please see also response to comment GJ-236.3, below.

Response to Comment 236.2
This comment raises a legal issue, not an environmental issue. As described in Response 236.1, CDF believes the Management Plan will meet the requirements of all the statutes protecting rare, threatened, and endangered plants.

Response to Comment 236.3
Regarding the NPPA paragraph in the EIR, please refer to response to comment GJ-236.10E, below, for text that supercedes the DEIR regarding the intent of JDSF to address sensitive plant resources with scoping, surveying, and mitigating irregardless of the NPPA salvage exemption.

Response to Comment 236.4
In July 1999, CDF provided to all Registered Professional Foresters (RPFs) ***CDF Guidelines for Species Surveys, Avoidance of Significant Impacts and Identified Mitigations.*** The Guidelines were developed to provide RPFs information to aid in meeting various legal requirements, particularly 14 CCR §§1034(w) and 919.4. The guidelines describe a general approach to scoping, surveys, and mitigation development for Timber Harvesting Plans, Nonindustrial Timber Management Plans, and PTHPs. In addition, the DFG guidelines will be used as a guide in formulation of survey for sensitive plants. The DFG Guidelines are just that – guidelines. See also Responses 236.5, 236.9 and 236.10.

Response to Comment 236.5
It is true that a comprehensive floristic survey has not been done for the entire forest, but through project-by-project scoping and survey, knowledge of sensitive plant species and the flora of JDSF will increase. The proposed project-by-project scoping, surveys, and development of project measures will avoid or minimize significant impacts to sensitive plant resources. Please refer to response to comment GJ-236.10, below, for various text changes to the DEIR and DFMP regarding aspects of scoping and surveying.

Response to Comment 236.6
Changes have been made to the DFMP and DEIR to increase informational consistency. The following is a list of updates that address consistency in species information.

236.6A. In the DEIR and Management Plan, the Plant Species of Concern list (p. 143 of the DEIR and p. 62 of the DFMP) is as follows:

Plant and Lichen Species of Concern

- ***Arctostaphylos mendocinoensis,*** **"**pygmy manzanita**"**
- ***Astragalus agnicidus,*** **"**Humboldt milkvetch**"**
- ***Calamagrostis bolanderi,*** **"**Bolander's reed grass**"**
- ***Campanula californica,*** **"**swamp harebell**"**
- ***Carex californica,*** **"**California sedge**"**
- ***Cupressus goveniana ssp. pigmaea,*** **"**pygmy cypress**"**
- ***Lilium maritimum,*** **"**coast lily**"**
- ***Lycopodium clavatum,*** **"**running-pine**"**
- ***Mitella caulescens,*** **"**leafy-stemmed mitrewort**"**
- ***Pinus contorta ssp. bolanderi,*** **"**Bolander's pine**"**
- ***Usnea longissima,*** **"**long-beard lichen**"**

236.6B. Additionally, the Decision and Rationale column in Appendix 8D-3 of the DEIR for the ***Lycopodium clavatum*** row should have read: "***Known.***"

236.6C. See response to comment GJ-236.10L, mitigation 7, below, for text changes in the first bullet under the Plant and Animal Species of Concern Possibly Present on the JDSF list in the DFMP for an updated list of sensitive plant species that have the potential to occur on JDSF.

236.6D. The scoping, survey, and mitigation process should allow for inclusion of species that are not on Table 14, so addition and removal of sensitive species to and from Table 14 should not affect protection of sensitive species. After reviewing DFG's comments and available habitat information, CDF concurs that it is reasonable to remove the above-mentioned species from Table 14. Table 14 of the DEIR and the list of Plant and Animal Species of Concern Possibly Present on JDSF on p. 68 of the DFMP will have the following species removed based on best available current knowledge of the species range and likely habitat: ***Arenaria paludicola*** "marsh sandwort," ***Castilleja mendocinensis*** "Mendocino coast Indian paintbrush," ***Horkelia marinensis*** "Point Reyes horkelia," ***Limnanthes bakeri*** "Baker's meadowfoam," ***Navarretia leucocephala*** ssp. ***bakeri*** "Baker's navarretia," and ***Phacelia insularis*** var. ***continentis*** "North Coast phacelia." of the above, only ***Castilleja mendocinensis*** and ***Horkelia marinensis*** are in the DFMP list. ***Limnanthes bakeri*** was mistakenly listed in Table 14 but was listed in Table 15 as "Unlikely."

In Appendix 8D-1 of the EIR, the following species descriptions should not have been included: ***Arenaria paludicola*** "marsh sandwort," ***Castilleja mendocinensis*** "Mendocino

coast Indian paintbrush," ***Horkelia marinensis*** "Point Reyes horkelia," ***Navarretia leucocephala*** ssp. ***bakeri*** "Baker's navarretia," and ***Phacelia insularis*** var. ***continentis*** "North Coast phacelia." ***Limnanthes bakeri*** was not included in Appendix 8D-1.

The Decision and Rationale column of Appendix 8D-3 should have included the following:

- (***Arenaria paludicola***) "***Unlikely (misidentification for Mendocino Co., according to DFG comments for the DEIR)"***
- (***Horkelia marinensis***) "***Unlikely (coastal dunes, coastal prairie, coastal scrub/sandy)"***
- (***Navarretia leucocephala*** ssp. ***bakeri***) ***"Watch for (meadows, valley and foothill grassland)***
- (***Phacelia insularis*** var. ***continentis***) ***"Unlikely (coastal bluff scrub, coastal dunes, sandy soils, and bluffs)***
- Note that no change is needed for the Decision and Rationale for excluding ***Castilleja mendocinensis*** and ***Limnanthes bakeri*** from Table 14; they are already listed as "unlikely."

236.6E. Table 14 should have been titled, "SPECIAL STATUS PLANT AND LICHEN SPECIES WITH POTENTIAL OCCURRENCES WITHIN JDS" and should have included long-beard lichen. Table 14 of the final EIR and the Plant and Animal Species of Concern Possibly Present on JDSF list in the Management Plan (first bullet under this section on p. 68 of the DFMP) should have included the following:

- ***Boschniakia hookeri "small groundcone," CNPS list 2, RED 3-1-1, State None, Federal None***
- ***Glyceria grandis "American manna grass," CNPS list 2, RED 3-1-1, State None, Federal None***
- ***Usnea longissima "long-beard lichen," CNPS None, RED None, State None, Federal None***

An extra sentence should have been inserted in the final EIR just after Table 14 that discussed the ranking that qualifies this lichen to be considered sensitive. The sentence in the final EIR will state: "***Usnea longissima is considered a sensitive lichen due to a Global Rank of G3 (21-100 element occurrences OR 3,000-10,000 individuals OR 10,000-50,000 acres) and a State Rank of S2.1 (6-20 element occurrences OR 1,000-3,000 individuals OR 2,000-10,000 acres; very threatened) as listed in DFG's Special Vascular Plants, Bryophytes, and Lichens List (Natural Diversity Database July 2002)."***

Species descriptions (presented separately from this response letter) for the above three species should have been included in Appendix 8D-1 of the final EIR. Appendix 8D-1 should have titled, "***Species descriptions for rare, threatened, endangered, and sensitive plant and lichen species potentially occurring on JDSF."***

These species should have been included in Appendix 8D-3 of the final EIR as follows:

- ***Boschniakia hookeri "small groundcone," CNPS list 2, RED 3-1-1, State None, Federal None, Decision and Rationale: Likely (recent detection in coastal forest in Mendocino Co. according to DFG comments for the DEIR)***
- ***Glyceria grandis "American manna grass," CNPS list 2, RED 3-1-1, State None, Federal None, Decision and Rationale: Likely (forested riparian areas and wetlands)***
- ***Usnea longissima "long-beard lichen," CNPS None, RED None, State None, Federal None, Decision and Rationale: Known (recent detection on JDSF by DFG Environmental Scientist Ms. Clare Golec)***

236.6F. According to DFG comments, the following ***"Angelica lucida, Antirrhinum virga, Asclepias solanoana, Astragalus breweri, Calystegia collina ssp. oxyphylla, Clarkia gracilis ssp. tracyi, Cypripedium californicum, Eriogonum strictum var. greenei, Eriogonum umbellatum var. bahiiforme, Eschscholzia hypecoides, Gilia sinistra ssp. pinnatisecta, Glehnia littoralis ssp. leiocarpa, Hackelia amethystine, Linanthus rattanii, Lomatium engelmannii, Melica spectabilis, Mimulus nudatus, Navarretia cotulifolia, Navarretia subuligera, Orobanche valida ssp. howellii, Silene campanulata ssp. campanulata, Stellaria littoralis, Streptanthus barbiger, Streptanthus drepanoides***." are not likely to occur on JDSF. Table 15 and the Plant and Animal Species of Concern Possibly Present on JDSF list in the Management Plan should not include the above species.

236.6G. Two CNPS list 3 species that were included in Appendix 8D-3 should have been included in Table 15, as follows:

- ***Cardamine pachystigma*** var***. dissectifolia***, Common Name: dissected-leaved toothwort, Family***: Brassicaceae***
- ***Hemizonia congesta*** ssp***. leucocephala***, Common Name: Hayfield tarplant, Family: Asteraceae

Table 15 should have been titled, "***Table 15 CNPS List 3 and 4 species that may potentially occur within JDSF"***

No other CNPS list 3 species, except the above two, resulted from the query of the CNPS Inventory for the project and adjacent quadrangles. However, DFG indicates that the following additional list three plant specie has the potential to occur on JDSF (Pers. Com CDFG September 3, 2002):

- ***Erigeron biolettii,*** common name: streamside daisy.

Other list 3 species may also potentially occur on the JDSF based on habitat requirements. Sensitive plant species that are not listed in Table 14 or 15 but that have the potential to occur on JDSF will be addressed through the adaptive nature of the proposed scoping, survey, and mitigation process with input from DFG.

With the addition of List 3 species to Table 15, it is appropriate to add text to the paragraph before Table 15 to incorporate List 3 species into the scoping process. The paragraph before Table 15 (found on p. 138 of the DEIR) should have included the following sentence, ***"In addition, species that are listed by CNPS as plants about which we***

need more information (List 3) and plants of unlimited distribution (List 4) should be considered during scoping."

236.6H. As with Table 14, Table 15 should have contained species that are likely to occur on the JDSF and exclude species that are not as likely to occur. Therefore, based on DFG's comments and recommendations, Table 15 of the final EIR should not have included the following species:

> ***Angelica lucida, Antirrhinum virga, Asclepias solanoana, Astragalus breweri, , Calystegia collina ssp. oxyphylla, Clarkia gracilis ssp. tracyi, Cypripedium californicum, Eriogonum strictum var. greenei, Eriogonum umbellatum var. bahiiforme, Eschscholzia hypecoides, Gilia sinistra ssp. pinnatisecta, Glehnia littoralis ssp. leiocarpa, Hackelia amethystine, Linanthus rattanii, Lomatium engelmannii, Melica spectabilis, Mimulus nudatus, Navarretia cotulifolia, Navarretia subuligera, Orobanche valida ssp. howellii, Silene campanulata ssp. campanulata, Stellaria littoralis, Streptanthus barbiger, Streptanthus drepanoides.***

236.6I. In the DEIR, the second sentence of the Federal and State-listed Plant Species paragraph (on p. 139 of the DEIR) should have read "***Five additional plant species are considered by the State of California to be endangered or rare."*** The following sentence should also have been included in the that paragraph EIR: "***North Coast semaphore grass (Pleuropogon hooverianus) is a state listed rare species and is a candidate for state listed endangered."***

To clarify the DEIR, the last sentence in the Scoping section (p. 145 of the DEIR) should have included the following:

- In general, the pre-project scoping process will include DFG input referencing Tables 14 and 15 of the EIR, Appendix 8D-1 and 8D-3, available database information from the California Natural Diversity Database and CNPS Inventory , and other sources of sensitive plant habitat and occurrence data.

The above-stated sentence will also become the first bullet under the Species Protection section (p. 62) of the DFMP (see response to comment GJ-236.10L, Mitigation 3).

The Decision and Rationale column of Appendix 8D-3 in the DEIR should have included:

- ***Erigeron supplex "Watch for in coastal prairie/coastal bluff scrub"(according to GJ-236)***

Response to Comment 236.7
To clarify, in the final EIR, the last sentence in the Scoping section (p. 145 of the DEIR) should have included the following:

- In general, the pre-project scoping process will include DFG input referencing Tables 14 and 15 of the EIR, Appendix 8D-1 and 8D-3, available database information from the California Natural Diversity Database and CNPS Inventory, and other sources of sensitive plant habitat and occurrence data.

The above-stated sentence will also become the first bullet under the Species Protection section (p. 62) of the DFMP (see response to comment GJ-236.10L, Mitigation 3).

The Decision and Rationale column of Appendix 8D-3 in the final EIR should have included:

- (for ***Erigeron supplex***) "***Watch for (coastal prairie/coastal bluff scrub public comment by GJ-236)***"

Response to Comment 236.8
It is true that there is currently not a comprehensive list of plant species that occur on JDSF. Once the Management Plan is implemented, inventory of plant resources will occur on a project-by-project basis via surveys conducted patterned after currently-accepted protocol. Please refer to response to comment GJ-236.10G and 10L for updated text.

Response to Comment 236.9
A comprehensive floristic baseline of the JDSF would be very useful but is not a requirement. Baseline data will be obtained on a project-by-project basis through surveys patterned after currently-accepted protocol. It is the intent of JDSF to monitor forest resources as stated in their goals and objectives. Please refer to the following portions of the DEIR that either directly incorporate monitoring and inventory or imply that these procedures are necessary for implementing the following goals and objectives.

- p. 26 and 27, Goal #1
    - (objective 1-2) Conduct monitoring of resource management activities to gauge their effectiveness in meeting project objectives.
    - (objective 1-3) Demonstrate the compatibilities and conflicts involved in multiple use of forest land, and investigate methods to mitigate conflicts.
    - (objective 1-7) Consult and cooperate with universities and colleges, the U.S. Forest Service, and other public and private researchers in conducting research and demonstration projects. Enter into cooperative agreements for investigations of mutual interest. Make the State Forest available to educational institutions and other agencies for research and demonstration projects.
- p. 28, Goal #3
    - (objective 3-6) Monitor the development and condition of terrestrial and aquatic habitats over time, and apply adaptive management principles to ensure that goals are met.
- p. 28, Goal #4
    - (objective 4-6) Minimize the influence of exotic plants and animals.

- p. 29, Goal # 6
    - (objective 6-1) Collect, process, interpret, analyze, update, store, index, and make retrievable the array of information and data about the State Forest and its resources needed to support Forest planning and management.
    - (objective 6-2) Prepare, monitor and update State Forest Management Plans and program area plans.
- p. 30, Goal # 7
    - (objective 7-1) Preserve native plant species and limit the invasion and spread of exotics. Protect native communities from insect, disease, and plant pests using the concept of integrated pest management.

A database would be very useful for tracking and monitoring sensitive plant occurrences across the JDSF. Although a database was not specifically mentioned in the DEIR, tracking biological data is a specific objective of JDSF. Please refer to p. 39 of the DFMP, Data and Information Management section:

> JDSF is currently building a state-of-the-art information system to integrate all survey data on the Forest into a data base management system, the State Forest Data Bank. Future resource data will be integrated using a common format. The enhanced access to data will benefit managers, researchers and the public.

Additionally, the CDFG California Natural Diversity Database tracks occurrences of sensitive species and will continue to be used as a source of information and repository for sensitive species occurrences, habitat and regional locations, etc.

Response to Comment 236.10

236.10A. To clarify that pygmy forests can be considered wetlands, the following should become the second-to-last sentence in the fourth paragraph on p. 128 of the DEIR: "***Swamps, (tree-dominated areas, such as on portions of alluvial redwood floodplains) and pygmy forests, can also constitute as wetlands, depending on site conditions***

In the same respect, the following should become the second-to-last sentence in the Wetlands section (p. 211, section 6.5.1 Setting, second paragraph) of the DEIR: ***"It is likely that some poorly drained areas in the pygmy forest also meet wetland criteria."*** This sentence is a direct quote from p. 15 of the DFMP's Wetlands section.

236.10B. To incorporate ideas that increase awareness of the sensitive nature of the Pygmy Cypress Series, page 132 of the DEIR should have stated:

- Mendocino pygmy forest, a unique ecological system recognized by the California Natural Diversity Database as a sensitive plant community type, occurs only in coastal Mendocino County.

- Pygmy cypress (***Cupressus goveniana*** ssp. ***pygmyaea***) is a common component in the canopy for Pygmy Cypress Series (Sawyer and Keeler-Wolf 1995) / pygmy forest (Jenny et al. 1969) and is a CNPS list 1B species
- Shrub species are common and can include hairy manzanita (Arctostaphylos columbiana), pygmy manzanita (***Arctostaphylos mendocinensis***; a CNPS list 1B species)
- The herbaceous layer can also include two CNPS list 1B species, swamp harebell (Campanula californica) and coast lily (***Lilium maritimum***).
- It is likely that some poorly drained areas in the pygmy forest also meet wetland criteria." As mentioned above, this sentence is a direct quote from p. 15 of the DFMP.

236.10C. To clarify that running-pine (***Lycopodium clavatum***) is not limited to seeps and microsites, page 134 of the DEIR should have the section rewritten as: ***Some sensitive plant species, such as pygmy manzanita, show a great affinity to the pygmy forest, while others, such as swamp harebell, can be found in both pygmy forests and less site-specific habitats."*** The remaining sentences in this same paragraph will be changed to read: "***The restrictions on activities in WLPZs will provide a measure of protection to some species that are generally restricted to riparian areas or wetlands, such as livid sedge. Some species, such as coast fawn-lily and running-pine, are forest generalists and would not necessarily be protected by WLPZ SCAs***

- Forest openings also provide potential habitat for the endangered Humboldt milkvetch ***(Astragalus agnicidus)***

236.10D. To clarify potential concerns as to how the CNPS lists are compiled and why they should be incorporated into the scoping, survey, and mitigation process, the following text should have been included after the last sentence of the paragraph on p. 138 of the DEIR:

> "***The CNPS lists are developed through a formal review process involving a scientific advisory committee composed of noted academic, professional, and amateur botanists across the state. The scientific advisory committee reviews the best available data to compile rare, endangered, threatened, and uncommon plant lists. CDFG currently accepts the premise that placement of plants on CNPS lists 1A, 1B and 2 provides a fair argument that they qualify as rare, endangered or threatened under Section 15380(d) of CEQA (CDFG, comments on DEIR, 2002)."***

236.10E. The following should have been included in the last sentence in the NPPA paragraph (p. 140 of the DEIR):

> Other management activities may not be exempted from Fish and Game Code Section 1911 (Fish and Game Code Section 1913). 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 DFG, 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 level less than significant.

236.10F. The following should have been inserted after the second sentence in the CEQA paragraph for the final EIR (page 140 in the DEIR):

CEQA Guidelines Section 15380(b) provides the criteria for Endangered, Rare and Threatened species. Section 15380(d) states that species that are not on state or federal lists, but that meet the criteria in subsection (b) of Section 15380, "shall nevertheless be considered to be endangered, rare, or threatened." CNPS List 1A, 1B, and 2 plant species will be initially presumed to meet these criteria, subject to review and reassessment during scoping. Additionally, under Section 15380, a species will be considered Endangered, Rare or Threatened if it is listed as such under the California or Federal Endangered Species Act and species designated as candidates for listing by the Fish and Game Commission under the CESA are also "presumed to be endangered, rare or threatened." The California ESA presumes that candidate species meet the criteria for listing as Endangered, Rare, or Threatened.

236.10G. To incorporate specific survey protocol and address the goals of adaptive management and of inventory stated for the JDSF, the following should have been included on p. 143 and 144 after the first sentence in the paragraph in the DEIR and p. 62 of the DFMP under the Species Protection section: "***Survey designs will be based on the concepts contained in the DFG Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Plant Communities (DFG 2000). Surveys conducted as part of THP development will follow the practices commonly accepted by CDF and CDFG for THP review. Surveys for other types of projects will recognize the specific features of those projects. (For example, road surface maintenance and roadside brushing are ongoing activities that create repeated periodic disturbances, precommercial thinning typically occurs a few years following the more substantial disturbance of a commercial harvest, and shaded fuel break construction targets ground cover vegetation***.)".

That paragraph should also have included:

> ***Observations of rare, threatened or endangered plants or plant communities will be recorded on Field Survey Forms and copies provided to CDFG*** 's California Natural Diversity Database (CNDDB

JDSF will provide for, on an as-needed basis, a sensitive plant identification training program to enhance the knowledge of field personnel that may encounter sensitive plant resources. Personnel who will be responsible for botanical surveys should meet the recommended qualifications for botanical consultants included in the DFG survey guidelines (DFG 2000). ***Field surveyors should have a demonstrated ability to identify the RTE species being surveyed for***.

These sentences should also be inserted into the Management Plan to clarify the last bullet at the bottom of p. 62 and the first bullet at the top of p. 63 of the DFMP. Regarding discussion of botanical surveys for rare, threatened and endangered plant species, it is appropriate to maintain consistent language throughout the EIR. To clarify and maintain consistent language

regarding the need for pre-project botanical assessment, in the final EIR, the phrase "***As resources allow***" will be removed from the first sentence of the last paragraph in the Plant Species of Concern Possibly Present on JDSF section (page 144 of the DEIR). This will not significantly alter the intent of the EIR. The stated phrase is also part of a sentence under the "***Plant and Animal Species of Concern Possibly Present on JDSF***" section in the Management Plan (page 68 of the DFMP) that is presented for a variety of sensitive plant and animal species. It is appropriate to leave the phrase intact in the Management Plan while removing the phrase in the portion of the EIR that discusses pre-project assessments for sensitive plant species.

> Additionally, the paragraph under the Surveys section of the DEIR should reflect the clarification that currently-accepted survey protocol should be used as guidance in formulation of survey (p. 145 of the DEIR and p. 69 of the DFMP), as follows:
>
> > When suitable habitat is present within or immediately adjacent to the project area, project planning documentation will include surveys ***based on the concepts contained in the DFG Guidelines).***and a discussion of the efforts made to determine presence or absence of the species in question. An assessment area that extends beyond the boundaries of the planned activity may also be required for some species.

236.10H. To address this issue, the paragraph regarding Habitat Management Practices (page 144 of the DEIR) should have read:

> "***Limited removal of species in the pygmy cypress forest may occur as a result of habitat development projects for the lotis blue butterfly. Prior to habitat development projects, rare plant surveys will be conducted according to accepted survey guidelines (see previous section) to address sensitive plant resources.***
> ***A qualified botanist will assess the appropriateness of removal of any sensitive plant species in relationship to fostering habitat for the growth of the butterfly's host species, Lotus formosissimus. Effectiveness monitoring will be conducted for any habitat management practice involving removal of plant species in the pygmy forest to assess the response of the forest to habitat alteration."***

The Habitat Management Practices section of the Management Plan (page 63 of the DFMP) will also have the above changes.

236.10I. To clarify the treatment of (rare, threatened, and endangered) unlisted species, the first sentence in the Guidelines for Species Surveys and Avoidance of Significant Impacts section (on p. 144 of the DEIR) should have read: : "***The DFMP includes guidelines for pre-project scoping, surveying, and mitigation development. These guidelines are included below. Rare, threatened and endangered species, as defined by Section 15380 of the CEQA Guidelines, will be addressed during the scoping, surveying, and mitigation-development processes. For species that do not meet the Section 15380 definitions of a rare, threatened, or endangered species but that are CNPS list 3 or 4 species,***

evaluation, scoping and mitigation practices are likely to vary according to identified need, the current state of species knowledge, and consideration of input provided by CDFG through the scoping process.

The Guidelines for Species Surveys and Avoidance of Significant Impacts section should not have included the bulleted sections titled "Listed Species" and "Unlisted Species" on p. 144 of the DEIR. The sentence at the end of the "Listed Species" bullet that states "***An assessment area that extends beyond the boundaries of the planned activity may also be required for some species"*** should have been included in the Survey section (on p. 145 of the DEIR).

The above-recommended update will require an update in the Guidelines for Species Surveys and Avoidance of Significant Impacts section (on p. 69) of the DFMP (see response to comment GJ-236.10L, Mitigations 8 and 9, below).

236.10J. The paragraph under the California Forest Practice Rules (currently on p. 145 of the DEIR) should have included the following sentence:

> The FPR state that "Where significant adverse impacts to non-listed species are identified, the RPF and Director shall incorporate feasible practices to reduce impacts as described in 14 CCR 898." (Sections 919.4, 939.4, and 959.4 of the California Forest Practice Rules, 2002).

236.10K. The last two sentences in the Impacts introductory paragraph (p. 146 of the DEIR) should have read:

> An intensive inventory of the botanical resources has not been conducted on JDSF; inventory is planned to occur on a project-by-project basis through surveys patterned after currently-accepted protocol. Potential impacts to botanical resources will be addressed at the project implementation level through pre-survey scoping in consultation with DFG, surveys , and development of measures that avoid or mitigate impacts to sensitive plant species.

The Impact 3 and 4 sections (currently p. 146 and 147 of the DEIR) provide quantification of species that show great affinity to the pygmy forest or SCA's, which species show Mendocino County as the end of their range, and which are known from only this county. To clarify, the number of species in each category should not have been included. The fourth sentence in the first paragraph at the top of p. 147 of the DEIR (that discusses sensitive species that are protected by default of habitat preference) should have read: "***Some sensitive plant species, such as pygmy manzanita, show a great affinity to the pygmy forest, while others, such as swamp harebell, can be found in both pygmy forests and less site-specific habitats."*** The remaining sentences in this same paragraph should have read:

> The WLPZs will provide a measure of protection to some species that are generally found in riparian areas or wetlands, such as livid sedge. Some species, such as coast fawn-lily and running-pine, are forest generalists and would not necessarily be protected by SCAs.

In the first paragraph in the Impact 4 section on p. 147 of the DEIR, the second and third sentences should have read:

> Some species, such as Humboldt milkvetch, that have the potential to occur on the JDSF are at the end of their range in Mendocino County, and some, including pygmy manzanita and pygmy cypress, are only known from Mendocino County.

Finally, the Impact 3 and 4 sections (currently p. 146 and 147 of the DEIR) are not specific as to which sensitive plant species will be addressed during the scoping, survey, and mitigation development processes. Response to comment GJ-236.10I, above, should clarify which species (i.e., listed species and unlisted species that meet the definitions defined by Section 15380(d) of the CEQA Guidelines and / or Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code) are addressed under these sections. The last paragraph of the Impact 4 section (p. 147 of the DEIR) should have read as follows:

> As discussed above, JDSF has committed to completing a scoping process, including rare plant surveys as necessary, on a management activity or project basis to determine if the management activity or project has the potential to significantly impact a listed or unlisted species that meets the definition of rare, threatened, or endangered under CEQA Guidelines or California Fish and Game Code. JDSF has also committed to developing mitigation measures for the protection of endangered, rare, or threatened plants (as defined previously) and potential habitat if they are identified

236.10L. The Mitigation and Monitoring paragraph (p. 148 of the DEIR) should not have included the last sentence. The measures identified in Section VII in this FEIR provide clarifications on CEQA-mandated mitigation and monitoring.

236.10M. The following change should be made to the first sentence in the Discussion box for Alternatives C, D, and E in Table 16 (on p. 149 of the DEIR) in the final EIR: ***Each of these alternatives would include the same protection measures for endangered, rare, or threatened plant species (both listed and unlisted).”*** Additionally, the following change should be made to the last sentence in the Discussion box for Alternatives C, D, and E in

Table 16 (on p. 149 of the DEIR) in the final EIR: ***"However, the DFMP, with the proposed scoping, survey, and mitigation-development processes, and the mitigations provided in the final EIR will reduce the level of impacts to below significant."***

Response to Comment 236.11
Floristic surveys conducted in areas where projects are not planned would be very valuable as baseline data; but based on a restricted budget, JDSF does not plan to conduct surveys in areas that will not be impacted by project activities. Information on botanical resources will be, however, compiled on a project-by-project basis through the scoping and survey procedures mentioned previously in this response letter. Eventually, use of the comprehensive database that is in development will allow tracking of data on the JDSF. Currently, the California Natural Diversity Database is and will continue to be used for tracking sensitive plant occurrences. Please refer to Response to comment GJ-236.9, above, for more information.

Response to Comment 236.12
It is expected that California Natural Diversity Database (CNDDB) forms will be turned in for each sensitive plant occurrence. Please refer to response to comment GJ-236.10G, above, for the text that will be incorporated into the final EIR and Management Plan regarding the use of CNDDB forms.

Response to Comment 236.13
As addressed in response to comments GJ-236.5, 8, 9, 10, and 11, above, it is CDF's opinion that (with the above-proposed alterations to the DEIR and DFMP) the proposed project-by-project scoping, survey, and development of project measures to avoid or minimize significant impacts to sensitive plant resources are adequate conservation management strategies.

Response to Comment 236.14
CDF commits to the level of scoping, survey, and impact avoidance specified within both the EIR and the DFMP. Botanical expertise is considered within staffing for biological expertise. In this sense, biological staffing needs are generic and include botanical, fisheries, and other biological disciplines. There are many options open to the Department in order to meet these commitments. These include trained CDF personnel, consultants, and new personnel. This is an operational issue.

Response to Comment 236.15
This is an operational issue. CDF has committed to the level of monitoring specified and has a number of options available to implement this monitoring program. These include continued forest inventory work, forest system modeling, and Geographic Information System applications.

Response to Comment 236.16
The relationship between expenses and revenues is not an environmental issue. CDF has committed to operate in compliance with the provisions of the DFMP. Allocation of revenues is not a function of the Management Plan, it is a function of Legislative authority and direction through the State budget process.

Response to Comment 236.17
CDF will provide the resources necessary to implement the Forest Management Plan. As management is proposed, significant impacts are not expected to occur.

Response to Comment 236.18
CDF intends to implement the management plan according to provisions therein, and both funding and staffing levels are sufficient to implement the plan.
It should be noted that adaptive management is a general term to describe the practice of allowing for changes in management of a resource, and it is not intended to be a mitigation measure. Mitigation measures are generally alterations in a proposed project activity that are designed to avoid or reduce impacts to sensitive species or habitat. The practice of adaptive management will provide protections to sensitive plant and lichen species and habitats through at least the following:

- The scoping process will incorporate a variety of sensitive plant resource data and input from DFG (as discussed in response to comments GJ-236.7 and 10, Mitigation 3, above). Species that have the potential to occur in the region of, and/or habitat types present at, a proposed project will be brought to the surveyor's attention rather than directing surveyor focus on a stagnant list of potentially-occurring species developed for the Management Plan. As new occurrence and habitat requirement information become available, those data will be incorporated into the scoping process as well.
- Conducting surveys will allow for detection of sensitive plant This will also develop a stronger case for whether the surveys are truly seasonally appropriate rather than relying on published phenologies for sensitive species, which can be problematic.
- Mitigation measures will be developed in consultation with DFG and will be based on the most current knowledge of environmental requirements for each sensitive species in relation to management activities, rather than specifying "one-size-fits-all" mitigation measures in the programmatic EIR.

Response to Comment 236.19
The DFMP does not propose to manage individual species in isolation. A variety of forest habitat conditions exist and still others will be recruited or created. Each is expected to host a community of associated plants and animals. Through time, following survey and monitoring efforts, a better understanding of plant associations will emerge. Scoping and survey efforts will begin to provide better information on species-habitat relationships, improving our understanding and knowledge base.

Response to Comment 236.20
Protection and restoration of intact, functioning native ecosystems is one of the stated goals of the DFMP. Among the provisions of the plan to achieve this goal is identification of unique forest habitat types and provisions to protect and enhance their ecosystem function. Included in this consideration are existing old-growth forest groves, riparian zones, late-seral forest, bogs and other unique wet areas, pygmy forest, and cypress groves. While virtually all of JDSF has been subjected to intensive disturbance in the past, many areas are beginning to recover proper

ecosystem function. Proper forest management, as proposed, will foster proper functioning ecosystems.

Response to Comment 236.21
CDF, utilizing both existing staff and in consultation with private botanists and DFG personnel, expects to be fully capable of fulfilling the provisions of the DFMP.

Response to Comment 236.22
The concern calls for speculation and does not represent a significant environmental issue. CDF expects to fulfill the provisions of the DFMP. Expertise can be gained through training of personnel, consultation with experts, hiring of additional trained personnel, and combinations of these. Comment upon the author's meaning and relative merits of "informal training" versus other forms of training, and interpretation of the author's use of the terms "more effective and efficient" calls for speculation.

Response to Comment 236.23
Please refer to response GJ-236.25, below, for a discussion of baseline data, and see Response to comment GJ-236.14, above, for a discussion of adaptive management versus mitigation measures.

Response to Comment 236.24
Please refer to response to comment GJ-236.25, below, for a discussion of controlled experiments.

236.25a
Please see Responses to Comments GJ -236-14 through 236-18.

236.25b
It is noted that a comprehensive floristic survey of JDSF would be useful. However, this is not a requirement to determine potential project-level impacts to sensitive plant species. Areas that do not have the potential to be impacted by project activities are not required to be addressed. Please also refer to response to comments GJ-236.8, 9, 11, and 14, above, for responses to comments regarding lack of an overall plant list, the need for a comprehensive floristic baseline, the need for surveys in non-project areas, and the distinction between adaptive management and mitigation measures.

236.25c
It is true that scientific, controlled experiments would assist in the goal of adaptive management by determining the most effective management practices/mitigation measures for sensitive taxa known to occur on JDSF. Such experiments may or may not be feasible depending on the species environmental requirements, population size, and viability, as well as the location of the species in relation to a project. Additionally, "controlled" experiments can be difficult to conduct in the natural environment due to difficulty in obtaining an ample number of replicates that have the same controlled environmental conditions with one or two variations that are to be measured.

Controlled experiments should be considered a highly useful tool to practice adaptive management and should be incorporated as an informal goal for managing botanical resources, but they should not be mandated.

As demonstrated in the following goals and objectives in the DEIR, JDSF intends to monitor its botanical resources and their responses to management practices.

- p. 26 and 27, Goal #1
  - (objective 1-2) ***Conduct monitoring of resource management activities to gauge their effectiveness in meeting project objectives.***
  - (objective 1-3) ***Demonstrate the compatibilities and conflicts involved in multiple use of forest land, and investigate methods to mitigate conflicts.***
  - (objective 1-7) ***Consult and cooperate with universities and colleges, the U.S. Forest Service, and other public and private researchers in conducting research and demonstration projects. Enter into cooperative agreements for investigations of mutual interest. Make the State Forest available to educational institutions and other agencies for research and demonstration projects.***
- p. 28, Goal #3
  - (objective 3-6) ***Monitor the development and condition of terrestrial and aquatic habitats over time, and apply adaptive management principles to ensure that goals are met.***
- p. 29, Goal # 6
  - (objective 6-1) ***Collect, process, interpret, analyze, update, store, index, and make retrievable the array of information and data about the State Forest and its resources needed to support Forest planning and management.***

The Competitive Research Grants program (see p. 91 and 92 of the DFMP) may be the most effective way to incorporate monitoring the responses of sensitive botanical resources to various management practices while using funding that is purposefully set aside for this type of work. The results would be incorporated into the developing State Forest Data Bank (refer to p. 93 of the DFMP) and utilized in adaptive management practices.

Response to Comment 236.26
See responses to 236.25 a-c.

Response to Comment 236.27
As mentioned in response to comment GJ-236.18, above, adaptive management is a general term to describe the practice of allowing for changes in management of a resource, and it is not intended to be a mitigation measure. Please see Response to comment GJ-236.18, above, for more details. As addressed in response to comments GJ-236.5, 8, 9, 10, and 11, above, it is CDF's opinion that (with the above-proposed alterations to the DEIR and DFMP) the proposed project-by-project scoping, surveys, and development of project measures to avoid or minimize significant impacts to sensitive plant resources are adequate conservation management strategies.

Response to Comment 236.28
It is true that the number of plant species of concern that "…currently occur or may have a high probability of occurrence on…" JDSF is incorrect (on page 17 of the DFMP, not p. 17 of the DEIR, as stated in the comment letter). This issue has been addressed in the mitigations added to the DEIR; please refer to response to comment GJ-236.10L for the text change.

Response to Comment 236.29
The information on current population status and trend for the ***Astragalus agnicidus*** (Humboldt milkvetch) species description in Appendix 8D-1 (p. 8D-1-2) was obtained from the Annual Report on the Status of Endangered, Threatened, and Candidate Species, Annual Report for 2000 on the DFG Habitat Conservation Planning Branch website. Page 101 of the report states that The Nature Conservancy,

> …had been the primary leader in coordinating protection and monitoring on Humboldt milk-vetch for ten years. However, since 1998 the local [North Coast] chapter of CNPS is taking over the coordination of monitoring and protection activities. A new management plan is in preparation. No monitoring was conducted in 1999. The current landowner is one of the active cooperators protecting Humboldt milk-vetch.

The above statement was in reference to the population in Humboldt County, so the DEIR is unclear regarding where monitoring has been done. The DEIR also did not incorporate the second-to-last sentence of the above quote stating that no monitoring was done in 1999. Unfortunately the DFG Habitat Conservation Planning Branch website does not have a 2001 Annual Report to provide further information.

To clarify the last paragraph in the DEIR for the Humboldt milkvetch species description in Appendix 8D-1, the following paragraph supercedes the first four sentences in the paragraph.

> Current population and trend for Humboldt milk-vetch are declining (CDFG 2000a). Monitoring of population trend has occurred for the population on the private ranch south of Miranda in Humboldt County, but no formal monitoring has been conducted for the populations on the JDSF. JDSF staff have, however, made numerous informal observations of the population for several years.

Response to Comment 236.30
Even-aged management includes a number of "standard" silvicultural methods and variations within each prescription. As mentioned on page 6 of the DEIR, "the DFMP proposes continued research and demonstrations of this method, including reserve-form stands (popularly called "variable retention")." Responsible and innovative forest management practices include even-aged management silvicultural methods which will continue to be used as proposed in the DFMP, and will be monitored and reviewed as necessary for needed changes.

Response to Comment 236.31
Please refer to response to comment GJ-236.30.

Response to Comment 236.32
Please refer to General Response 1.

Response to Comment 236.32b ("Impact of newly listed taxa")
Whether or not ***Phytophthora ramorum*** will indeed render species endangerment or extinction to any of the native plant species present on JDSF in the future is currently unknown.

The DEIR fully addresses mitigation measures (Section 6.4.3 of the DEIR) based on the best management practices currently known for sudden oak death in forests.
Should sudden oak death occur on the Forest, JDSF will proceed with mitigation efforts to minimize disease losses, as called for in the DEIR. In addition, there could also be opportunities for controlled studies in collaboration with university and agency scientists; however such studies are not part of this planning process.

Response to Comment 236.33
Please refer to response to comment GJ-236.25c for a discussion on controlled experiments, and refer to response to comment GJ-236.5 and 13 for a discussion on adequate conservation management measures.

Response to Comment 236.34
Analysis of potential future adoption of pesticide regulation calls for speculation. The DFMP includes discussion regarding the development of management alternatives to the use of herbicides. While CDF also believes that new research would provide valuable information, this is not a significant environmental issue.

Response to Comments 236.35 and 236.36
CDF is committed to managing the forest according to the provisions of the DFMP. The level of personnel and funding is sufficient to effectively manage the Forest. While CDF generally agrees that additional funding and/or personnel may increase the capabilities of the Department to manage the Forest, this is not a significant environmental issue. CDF is fully capable of achieving the desired future conditions over the course of time specified in the DFMP. With each subsequent revision of the management plan, this capability can be assessed.

Response to Comments 236.37 and 237.68
The California Department of Pesticide Regulation (DPR) is the lead agency that is responsible for researching, testing, and registering pesticides, not CDF. After a pesticide is registered for use in the State, DPR has an ongoing obligation to review new information that may show previously unknown problems or potential significant impacts resulting from the use of the pesticide. If the review of new information shows that significant adverse impacts has occurred or is likely to occur, DPR is required to reevaluate the registration of that chemical. Please refer to Response 236.39 for further detail.

Response to Comment 236.39
The JDSF DEIR is unable to resolve the issue that some people may have with the lack of regulatory protocols without changing existing State and Federal laws and regulations. The Hazards and Hazardous Materials Section, Section VII.8, states pertinent existing laws and regulations regarding the use of hazardous chemicals on JDSF and identifies measures to ensure regulatory compliance. If future regulations are adopted, JDSF will modify treatments accordingly to be in full compliance with the law. The DEIR states "As part of the ongoing planning for management of the State Forest, this plan will be revised periodically in the context of changing policies and priorities" (p. 49). Otherwise, the DFMP does not contain mechanisms to study the effects of increased regulation regarding hazards and hazardous chemicals, please refer to General Comment 2.

Response to Comment 236.40
Conditions that favor establishment or spread of exotic species are extremely variable and site-specific. In general, favorable conditions vary by species, and include a combination of light levels, soil disturbance, existing populations, and other spread mechanisms. Silvicultural system alone is not the principle determinant of spread. Some management techniques that can prove useful include direct control of existing populations, indirect control through a reduction in soil disturbance or retention of shade, an absence of site preparation or burning, rapid re-vegetation by native species, and road management techniques. When individual areas are proposed for timber harvest or other significant disturbances with potential to spread or maintain exotic species, an impacts assessment will be conducted and mitigation established on a site-specific basis in order to avoid significant effects associated with the spread of exotic species.

While CDF would welcome an opportunity to work cooperatively with local colleges to develop control programs of use to the general public and other forest landowners, this is not a significant environmental issue.

Response to Comment 236.41 and Response to Comment 236.42
Please refer to response to comment GJ-236.10, above, for text added to the DFMP and DEIR that will require botanical surveys.

Response to Comment 236.43
Please refer to Response GJ-236.10L, mitigations 4 and 5, for text that will be added to the final Management Plan that clarifies that mitigation measures will be developed if significant adverse effects are likely to result from a proposed action.

Response to Comment 236.44
The five-year rolling harvest schedule will incorporate the following botanical resource guidelines:

236.44a
Surveys will be conducted on a project-by-project basis (see response to comment GJ-236.10 for various changes to text); this should address a variety of plants and phenologies / life histories.

236.44b
Due to a general lack of information, a detailed response to this concern would call for speculation. Taxa that are sensitive to inappropriate reentry intervals that are considered a rare, threatened, or endangered plant species under CEQA Guidelines or Fish and Game Code will be addressed with scoping, surveys, and mitigation development as discussed in previous responses. Unless information is presented to DFG and / or JDSF regarding sensitivity of specific non-rare taxa to reentry levels, it is nearly impossible to determine what an appropriate reentry interval is for the high number of non-rare taxa. Studies on plant responses to specific reentry intervals would be excellent research projects that could be conducted under the Competitive Research Grants program (see p. 91 and 92 of the DFMP) and / or in conjunction with the goal #1, objective 1-7. Please refer to response to comment GJ-236.25c for further discussion on experiments and studies.

236.44c
Different plant species have varying responses to silvicultural prescriptions, size of even-aged management units, and rotation period. As mentioned in response to comment GJ-236.25c and 44b, above, studies on various aspects of botanical resources and their responses to forest management would be invaluable and may be able to be conducted under Competitive Research Grants and / or in conjunction with goal #1, objective 1-7.

Response to Comment 236.45
The concern being expressed is unclear as stated. As specified in the Plan, the assessment of proposed projects along with the mitigation or avoidance strategies developed as a result of the assessment will avoid significant impacts to listed species. The harvest schedule represents a list of areas where harvest activity is anticipated in the future. Each year, this schedule is updated to the provide the best available information.

Response to Comment 236.46
While a baseline floristic survey would be useful, it would not focus the need to avoid cumulative impacts to sensitive plant taxa. A method of addressing cumulative impacts to sensitive plant and lichen species has been proposed. Please refer to General Response 4.

Response to Comment 236.47
As described in the DFMP on page 41, JDSF will manage for forest resources under an ecosystem management approach. This involves a tiered approach with various scales of landscape planning with different considerations at each level. The levels of planning in the DFMP are at the Forest level, watershed level, stand level, and at the species level. Considerations at the various levels are described on pages 41-44 of the DFMP. THPs are the

implementation documents that contain provisions that account for the considerations at the various levels. Each THP preparation requires a cumulative impacts analysis which addresses known past, present, and future projects in the assessment area, and is subject to the DFMP provisions under which it is required to comply with (including the ecosystem management approach).

Response to Comment 236.48 and 236.9
See response to comment 236.47.

Response to Comment 236.50
This comment expresses an opinion. No response is required.

Response to Comment 236.51
Please see General Response 1.

Response to Comment 236.52
Please see General Response 1.

Response to Comment 236.53
Gary Rynearson of NRM who is also a member of the Board of Forestry and Fire Protection, is expected to recuse himself during the Board's consideration and action on the management plan for JDSF.

Response to Comment 236.54
Due to the nature of this DEIR with the extensive subject matter and detailed public comment, it was deemed necessary to go beyond the "normal" EIR length to comply with CEQA for EIR contents.

Response to Comment 236.55
Please see response to comment 236.50.

Response to Comment 236.56
Please see response to comment 236.50.

Response to Comment 236.57
The DEIR was available at CDF offices in Mendocino and Sonoma Counties, in the Mendocino County Library at Ukiah and Fort Bragg, and on the Internet. In addition, copies could be purchased in CD form from a vendor in the Bay Area and hard copies from a vendor in Fort Bragg.

JUL.19.2002 9:08AM NO.011 P.01

WW-257

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18 July 2002

Christopher P. Rowney, Program Manager
Demonstration State Forests
California Department of Forestry and Fire Protection
1416 Ninth Street
Sacramento, CA 95814

Subject: Jackson Demonstration State Forest
Draft Management Plan and DEIR

Dear Mr. Rowney:

On behalf of the Mendocino Coast Audubon Society we provide the following brief comments regarding the Forest Management Plan (FMP) for Jackson Demonstration State Forest and the draft Environmental Impact Report (DEIR) regarding the Plan.

We commend the managers of Jackson Demonstration State Forest for their on-going commitment to demonstrating sound forest management and for providing information about the effects of logging on the forested environment.

Among the Most Significant Public Resources in the Region

Jackson Forest has a unique ecological importance within the region. It is by far the largest bloc of public coast redwood forestland north of San Francisco and south of Humboldt County. It also contains most of the remaining significant stands of old second growth forest in that same region. It is by far the largest single block of public land in the coastal regions of Mendocino County and all of Sonoma County.

Large industrial timber companies dominate coastal forestland ownership adjacent to JDSF and in Mendocino County. Timber operations in the county have eliminated almost all old growth forests, and in the past decade have dramatically reduced stands of old second growth forest. The older second growth forest stands at Jackson are probably the largest blocs of such forest in Mendocino County.

JUL 1 8 2002
FSC:

The FMP Proposes Logging Most of the Old Second Growth

1 The DEIR fails to disclose that the majority of the oldest second growth now growing in JDSF is slated for logging. These are the stands that will grow into late succession forests the soonest, if they don't already meet that definition. Although the information in the DEIR is not adequate to exactly quantify the reduction (logging) planned for the oldest stands, the available information allows us to conclude it would be considerable.

Speaking purely from the environmental point of view, there is ample justification for eliminating commercial timber production at Jackson. Experimenting with how best to rehabilitate previously logged lands and restore them to late succession forest could provide ample scope for forest management demonstrations for the foreseeable future.

In the event that this is not the approach that is chosen, following are additional issues we believe to be of the highest priority. We will not explore them at length. Rather we refer you to and endorse Sierra Club's comments regarding these matters.

Need to Designate Marbled Murrelet Recovery Habitat

The marbled murrelets known to be nesting on state parkland adjacent to Jackson must be protected from any potential impairment of their breeding success. A large no-logging buffer must be established in the contiguous and nearby forest stands in Jackson to protect these endangered nesting birds in Russian Gulch. These forest
2 stands, currently slated for logging, must be completely protected.

Additionally, in the older second growth forest beyond the no-logging buffer, new marbled murrelet habitat should be developed. To accomplish this, marbled murrelet
3 experts should identify significant, well placed high quality habitat and implement controlled experiments to determine how best to create suitable nesting habitat for murrelets over time.

Although the DEIR has failed to mention the federal Recovery Plan for marbled murrelets, it is the best available guidance on the subject. The Recovery Plan recommends that in Recovery Region 5, where Jackson is located, that all known
4 murrelets be carefully protected and that new suitable nesting habitat should be developed as soon as possible. We strongly support the Recovery Plan recommendations.

Murrelets' status as endangered under the California ESA is an additional reason why Jackson should implement the federal recovery plan strategy. Under CESA, state
5 agencies have a duty to help recover endangered species as per Fish and Game Code sections 2053, 2055, and 2061.

Need for Broad, Densely Vegetated Riparian Corridors

One of the more disappointing aspects of Jackson's Management Plan is the statement
6 of Riparian Management prescriptions. The prescriptions are a minimalist approach and do not constitute a riparian management strategy. They stand in sharp contrast to

the federal approach to riparian management adopted as the *Standards and Guidelines for Management of Habitat for Late Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* [1] (*Standards and Guidelines*) adopted more than eight years ago, after rigorous scientific review, for federal forests in the same ecosystem as Jackson. Among the objectives of the federal Aquatic Conservation Strategy is to: "Maintain and restore habitat to support well-distributed populations of native plant, 7 invertebrate, and vertebrate riparian-dependent species." [2] A similar goal, with a similar strategy, should be established for Jackson.

Although riparian management is sometimes mistakenly considered to be limited in importance to fish and aquatic organisms, the State of California has correctly recognized the importance of riparian areas for avian species. The Riparian Bird Conservation Plan is a collaborative effort of the Riparian Habitat Joint Venture (Joint Venture) made up of numerous federal and California state agencies and non-profits including the CA Department of Fish and Game, the US Fish and Wildlife Service, Point Reyes Bird Observatory, and Audubon Society. According to the Joint Venture's August 2000 Conservation Plan, "due to their biological wealth and severe degradation, riparian areas are the most critical habitat for conservation of Neotropical migrants and resident birds in the West.... The loss of riparian habitats may be the most important cause of population decline among landbird species in western North America." [3]

The DEIR correctly points out that forest patch size, habitat fragmentation, and resulting predation are major concerns in nesting success for Neotropical bird species. 8 Yet, with the exception of the 2500 acre Woodlands Special Treatment Area (which itself has a 270 acre patch in the middle that is slated for logging) and the few much smaller Old-Growth Groves and Development Areas, all the other areas designated for Late Succession Development are thin ribbons of riparian habitat along streams. In addition to the problem with edge-effect, regular re-entries for logging will be likely to damage 9 the development of the dense riparian understory that is vital for the nesting success of many smaller Neotropicals.

Regarding riparian-related avian issues, we recommend that the FMP help implement the goals developed by the Joint Venture's Riparian Bird Conservation Plan. These 10 goals include collecting and analyzing existing information, doubling the extent of riparian habitat in California, and providing guidance and technical assistance for private landowners and managers.

We can think of no better place than Jackson to provide a very significant contribution to implementing the goal of doubling the extent of riparian habitat in California. For virtually no cost, by adopting a Riparian Management Strategy that mirrors the federal Standards and Guidelines, Jackson could add a significant amount of protected riparian habitat in an area where no other easy opportunities exist to contribute to that goal.

---

[1] UDSA Forest Service, UDSOI Bureau of Land Management, *Record of Decision and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl*, April 1994.
[2] *Standards and Guidelines*, Page B-11
[3] Partners in Flight and the Riparian Habitat Joint Venture. *The Riparian Bird Conservation Plan*, August 2000. Executive Summary, Page v

Monitoring the changes in the avian population over time within those zones would be consistent with the demonstration function of Jackson and it would also contribute to
11 the Joint Venture's goal of collecting data to inform land managers.

End Clearcutting in All Forms

The FMP's determination to modify clearcutting by the use of variable retention of legacy components must be considered, in some respects, to be a step in the right direction. However, from the avian and habitat protection perspective, a much better step would be to eliminate clearcutting altogether. While it is true that clearcutting creates habitat for some species, these species are already abundant in the region,
12 whereas the species that require a more complex forested habitat are declining or already imperiled. Clearcutting, even with the addition of variable retention of legacy
13 features, does not mimic any natural forest condition in this region. Therefore, forest-dependent avian species are not well adapted to the large openings created by clearcutting. Additionally, the use of herbicides that generally accompanies
14 clearcutting is well known to be harmful to avian species and their insect prey. Jackson already has huge tracts of previously clear-cut land where research can proceed. We
15 strongly urge you to eliminate clearcutting from the timber harvest program at Jackson.

Summary

While we recognize that the draft Jackson Demonstration State Forest Management Plan represents a major effort by the Department, we urge you to make significant revisions to better reflect Jackson's role as a regional resource and better implement its forest management demonstration function. These modifications should include:

- Increased protection for known nesting marbled murrelets
- Development of large areas of new murrelet habitat
- Demonstrations and experiments regarding how best to develop murrelet habitat
- Adoption of a Riparian Management Strategy consistent with the *Standards and Guidelines* adopted for federal forests in this eco-region
- Demonstrations consistent with the Riparian Habitat Joint Venture's goals
- Elimination of clear-cutting

Your attention to our concerns will be greatly appreciated.

Sincerely,

Warren F. Wade, President
Mendocino Coast Audubon Society

Page 4

Letter WW-237 (Mendocino Coast Audubon Society)

Response to Comment 237.1
The DEIR includes a map that delineates the management vegetation classes of JDSF (Figure F) and a map that delineates the short term (5-year) harvest schedule and the longer term silvicultural allocation plan (Figure M). Figure J also delineates the scheduled short-term harvest areas in relationship to the harvesting that has occurred since 1980. A discussion of the vegetation classifications within JDSF begins on page 151 with additional information contained in Appendix 8. The short-term harvest schedule and silvicultural allocation plan are all discussed in the text of the DEIR starting on page 174. On page 153, the DEIR states that approximately 60% of JDSF is classified as consisting of stands with trees larger than 24 inches.

After review of the information provided in the DEIR, it is incorrect to conclude that the majority of the oldest second growth now growing in JDSF is slated for logging. Review of Figures M and J indicate that the timber stands included in the short-term harvest schedule include a mosaic of timber types that represent the majority of the types present in the Forest. Review of Figure J indicates that some of the areas proposed for harvest in the short term are re-entries into managed stands that have been previously thinned, selectively harvested or otherwise partially cut. Review of the information presented in the DEIR indicates that most of the areas included in the short-term harvest schedule are composed of Vegetation Management classes from the 18-inch and larger classification. However, this is representative of the majority of the Forest.

It is an incorrect characterization to say that the short-term harvest schedule targets the oldest stands for harvest in such a way as to result in a considerable reduction in mature second growth timber stands. The majority of the proposed harvesting is uneven-aged silviculture or thinning in even-aged allocation areas. These partial cutting systems will alter the tree density, diameter distribution, and species composition of the stands, but the stands will retain a significant component of their oldest second-growth trees. Some areas are proposed for regeneration harvests in the even-aged allocation areas, as part of a long-term management plan that will eventually result in both the harvest and creation of stands between one and 150 years of age that is sustainable over time.

Response to Comment 237.2
All stands occupied by murrelets, including Russian Gulch State Park, will be protected and/or provided buffers on a project basis through consultation with CDFG. Standard protection buffers for stands occupied by murrelets include:

- 300-foot “No Cut” zone
- Consultation with DFG is required when operations are proposed to occur within 0.25 miles of potential habitat extending to 0.5 if helicopter yarding is planned.
- As described in the FPR, State Park Special Treatment Buffers shall be a minimum of 200 feet.

Response to Comment 237.3
Please refer to General Responses 1 and 2.

Response to Comment 237.4
The final Recovery Plan for the marbled murrelet is mentioned in the DEIR (see page 245). Please refer to response WW-237.2 for the murrelet nest site protection. As discussed in the DFMP and DEIR, approximately 20% of JDSF will be managed for the development of late successional habitat.

Response to Comment 237.5
Please refer to General Response 1 and 5.

Response to Comment 237.6 and 237.7
Please refer to General Response 1. Also, please refer to page 61 of the DFMP for a goal of the JDSF riparian zone management as well as Appendix II of the DFMP for more detailed goals and objectives. Additional details of the JDSF riparian management strategies can be found on DFMP pages 63 and 69.

Response to Comment 237.8
Approximately 30,500 acres (63%) of JDSF will be managed for the development of late successional habitat or will be managed as uneven-aged stands. Even within most of the even-aged areas between 5 and 30 trees per acre will be retained as well as all snags. Although Clear cutting and to a lesser extent Group Selection harvest methods result in creation of a forest edge, Selection, Thinning, and other uneven-aged management prescriptions generally result in feathered edges. Coupling uneven-aged management with the late seral development Special Concern Areas should result in the retention and development of large patches of contiguous habitat over time.

Response to Comment 237.9
Impacts to riparian vegetation in relation to aquatic habitat are addressed starting on DEIR page 120. Additional impacts discussion in relation to broader riparian habitat impacts is provided on DEIR page 265. Furthermore, the riparian zones will be managed for the development of late seral characteristics. An impact discussion relating to late seral development is provided starting on page 178. The DEIR found that the proposed project would not have a significant impact on riparian habitat. Class I riparian zones will not be entered more often than once every 20 years for timber management. Within the class I and II WLPZ, the high conifer basal area retention standards, as well as high canopy retention standards will significantly limit entry into riparian zones in general. Harvesting in dense closed canopies that results in a more open canopy would promote the development of understory riparian vegetation. This sort of development is expected to occur as a result of the proposed management, but not to significant amounts in the short term (DEIR page 180). Given the diverse nature of the current conditions, and the limited scope of harvesting within the riparian zone, understory vegetation in the riparian areas will not be significantly affected, and in most cases, will be provided an increased opportunity for development.

Response to Comment 237.10 and 237.11
Please refer to General Response 1. The management goals and objectives included in the DFMP appear to be consistent with the goals mentioned in the comment.

Response to Comment 237.12-237.15
The dense mature second growth forest present on JDSF is the product of historic clear cutting on a broad scale as described in the DEIR. More recently, the practice of clear cutting has declined. Table 21 on DEIR page 161 indicates that 1,913 acres have been clearcut 1980. The majority of the clear cutting occurred prior to 1990, with less than 300 acres of clear cutting since 1990. Even-aged management has been conducted in compliance with forest practice regulations that include provisions for cutting unit or patch size, unit spacing, and time and stocking requirements to be met before adjacent stands can be cut. One of the goals of JDSF is to maintain a diverse range of timber and habitat conditions, including some clearcut areas, to promote a diverse research program and diverse habitats.

Numerous wildlife species, including many species of special concern, utilize even-aged harvest units and other forest opening to fulfill one or more of their biological requirements. While extensive historic creation of even-aged harvest areas may have been detrimental to many species, current operations are of potential value as long as other forms forested habitat, including late successional habitats, are provided in the vicinity. For example, the primary prey item of the northern spotted owl in coastal California is the woodrat, a species that is found in greatest abundance in young even-aged stands often created by clear cutting. Spotted owls also require mature forest for roosting and nesting. The purple martin, a California Species of Special Concern, prefers to nest in large snags located within forest openings. Although few sensitive species prefer to nest in recent clearcuts, many of their prey items and hunting opportunities can be found in and along the edges of recent clearings. As planned a variety of habitats will be created and retained, along with key habitat elements such as snags and old growth. (Also see comment WW-237.8).

As discussed above, the use of clear cutting has declined on JDSF in recent years. The DEIR fully discloses and discusses past and current herbicide applications on the Forest and anticipated future uses (p.318-320). A discussion is also provided on the current regulatory framework governing the use of herbicides in the forested environment. The DEIR found that herbicides, when properly used in compliance with existing regulations, would not result in a significant impact to the environment (p. 325, second paragraph).

Response to Comment 237.14
When properly utilized as specified by label and in compliance with applicable regulation, herbicides do not pose a significant hazard to avian species and their insect prey. When properly utilized, plants are individually targeted. These plants may be either exotic species, or native species in direct competition with conifer regeneration. The use of herbicides can accelerate the return of harvested areas to a forested condition dominated by conifer tree species. While some species are targeted for removal by use of herbicides, the use tends to be

localized, and ample representation by native species being treated is generally maintained within the units and in nearby stands. This maintains both a food and habitat base for birds and their insect prey.

RL-238

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July 15, 2002

Christopher Rowney
California Department of Forestry
P.O. Box 944246, Sacramento
CA 94244-2460

Dear Christopher,

Thank you for the opportunity to review the Jackson Demonstration State Forest Draft Management Plan and EIR. We have focused our efforts on assessing the effect of the proposed management on vertebrate species that are typical of the forest communities of the region. We hope the following comments will be of value in planning the future of the forest.

Respectfully,

Ron LeValley

Ron LeValley, Senior Biologist
David Fix, Biologist

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BY:

The following comments were prepared by Ron LeValley and David Fix of Mad River Biologists. Mad River Biologists is a consulting company that conducts research, education, and management projects to support the conservation, protection, and recovery of natural ecosystems and their inhabitants.

Founder Ron LeValley has been an active member of the California birding community since the 1960's. His knowledge of the distribution and status of birds in northern California is well known. Ron's knowledge and teaching ability was tapped in 1992 by a number of agencies when he was asked to develop and operate a training program under the guidelines of the Pacific Seabird Group's Marbled Murrelet Inland Survey Protocol. . Ron has been active in the Pacific Seabird Group's Marbled Murrelet Technical Committee in their task of revising this protocol. Most of the Marbled Murrelet surveyors in California and southern Oregon have gone through the training program that MRB has operated annually since then. Ron has assisted the California Department of Fish and Game and the US Fish and Wildlife Service in assessing forested habitats for the potential of murrelet occupancy, particularly in relation to the Habitat Conservation Plan developed on lands managed by Pacific Lumber Company. MRB surveyors have performed thousands of murrelet surveys throughout Northern California and southern Oregon for a variety of research and management projects. When a population of Snowy Plovers was discovered nesting along the gravel bars of the lower Eel River in Humboldt County, Mad River Biologists coordinated and performed the major portion of the initial survey work. Again Ron's expertise was tapped by a variety of agencies, when he was asked to implement a training program to satisfy the needs of agency staff for complying with the requirements of the Endangered Species Act.

David Fix worked for the USDA Forest Service in Oregon, Washington, and California for eleven seasons as a timber cruiser, sale layout assistant, timber stand examination crew leader, seedling stocking surveyor, tree planter, and lead biological technician. He has been an avid birder for nearly 30 years. He has thorough experience with both bird distribution and habitat preferences of northwestern California birds. David is co-author of Birds of Northern California (Lone Pine Press, Edmonton, 2000). Although a resident of Humboldt County since 1992, he remains the most prolific contributing author to Oregon Birds, journal of Oregon Field Ornithologists, having published 48 articles and short notes.

Our comments are summarized in five categories that can be titled:

1. Monitoring and Adaptive Management.
2. Biodiversity at the expense of selected species.
3. Old-growth trees anywhere on the forest should be retained.
4. Edge effect
5. Even-aged management seems out of place

1. Monitoring and Adaptive Management

1 In general, the monitoring and adaptive management process is well-described. Unfortunately, the lack of a "Reference Condition" that includes wildlife data hampers the usefulness of the process.

2 While the "Desired Condition" is described in Chapter 3 of the management plan, it is done in such a way that makes it difficult to assess what the Desired Condition would provide for wildlife species.
3 Goals related to specific forest characteristics are well-described, but the theoretical justification for these goals has not been established.

As an example, goals are defined for the number and distribution of snags and dead woody debris in the forest. See page 219:

> "Target densities for snags in a variety of managed forests have been proposed by a number of authors using a variety of methods. Zarnowitz and Manuwal (1985) recommended 3.6 snags per acre for cavity-nesting birds in western hemlock Douglas-fir forests on the Olympic Peninsula of Washington. Mannan et al. (1980) recommended 4.3 snags per acre for breeding birds in Douglas-fir forests in western Oregon. Hunter (1990) suggested two to four large snags per acre as an average target for an array of habitat conditions across North America. In the Sierra Nevada of California, Raphael and White (1984) found that the abundance of cavity-nesting birds increased with snag density to a maximum at three snags per acre. Due to the longer life expectancy and high resistances to bugs, disease, and decay, redwood take much longer to develop into snags than other species such as Douglas fir, white fir, grand fir, and hardwoods."

4

Although studies of snag/wildlife relationships have been conducted elsewhere in the Pacific Northwest (such as in Northeast Oregon), we are aware of no studies of similar scope having been published from northwestern California. It is important to note that snag occurrence, persistence, and degree of occupation by wildlife species can be assumed to vary considerably with respect to forest tree species composition, elevation, exposure, and effects of regional climate. The present monitoring that focuses on these target levels does not include any determination that these target levels are appropriate, i.e. would result in healthy populations of cavity nesters or species that feed on organisms living in dead and decaying wood. Success or failure in meeting these goals carries with it vitally important ramifications for the status and health of wildlife populations. With this in mind, it is clear that such goals must be supported by documentation that their defining parameters ultimately impart on-the-ground meaning to the wildlife they presumably support. This seems like the type of research that would be appropriate for a Demonstration Forest.

The lack of a link to actual wildlife species causes other problems for the adaptive management loop. If a stated goal is to provide for biodiversity, how will the forest managers know that they have achieved it? The monitoring that is described is focused upon measuring the structural characteristics of the forests and streams. The only wildlife surveys planned are focused on special status species. For the most part, the measurements of the structural diversity will be used as a crude surrogate for estimating biodiversity. Unfortunately, we have precious little LOCAL data with which to link these measurements to biodiversity.

5

Another example is the width of the riparian zones. A monitoring and adaptive management goal is described on Page 116:

> Goal: Fish and Amphibian Populations. Maintain or improve current fish and amphibian populations on the Forest (high priority).

The described monitoring is entirely focused on fish populations. Our discussion below outlines the danger in doing that. There is no mention of any amphibian population assessment or monitoring. Even if the guidelines are followed very closely on the ground, there is no assessment of this management on amphibian populations. Unless we attempt to discover whether amphibian populations are sustainable under a given management regime, how will we know if these numbers have a true ecological meaning?

6

The wildlife monitoring parameters overemphasize the Rare, Threatened and Endangered species. Too much of the adaptive management feedback loop is dependent on providing habitat for these special species. There are many reasons for which this is problematic. Here are some examples:

7

a) The status of many RTE species is often dependent only in part on conditions related to forest management. Streamside management that is measured by presence or absence of Coho, for example, might not indicate a successful rehabilitation project if extrinsic

7 factors such as conditions in the ocean, overfishing, or a dramatic increase in sea lions and seals are limiting the population. A better monitor of aquatic ecosystem health would be amphibian surveys.

b) Some RTE species are locally common for specific reasons that, if acknowledged and understood, might encourage a very different scheme of forest management. For instance, Spotted Owls on the north coast of California are primarily a predator on woodrats. In other parts of its range, the owl's diet consists largely of flying squirrels. Because woodrat
8 abundance generally increases during the first few years following intensive harvest, a successful management scheme targeting owls within this region might well incorporate the protection of a nest tree or activity center with a small buffer next to clearcuts. While favoring Spotted Owls, this management scheme would negatively impact species that prefer late-seral forests characteristics.

c) Other RTE species are extremely rare and may be on the verge of local extinction; owing to their scarcity, they cannot provide data sufficient to guide forest management. Again,
9 gauging the success of late successional forest restoration on the presence of Marbled Murrelets could be disappointing, as murrelets are exceedingly rare in much of coastal California and are not likely to recover in these areas in the foreseeable future.

Changes in the status of COMMON species, made known through surveys, will produce much more useful information than changes in the status of rare species. We suggest that these problems are
10 perhaps best addressed by surveying and monitoring selected common species of vertebrates, and using the resulting abundant (and more statistically significant) data to assist efforts to implement 'informed' adaptive management.

Page 51 of the DMP says "A complete transition to an uneven-aged structure is largely theoretical, and may take up to 80 years or more." This underscores the importance of basic monitoring and the
11 need for adaptive management. In the final analysis, it will be left to future generations of foresters, biologists, and members of the interested public to appraise and judge whether the goals and the intent of proposed management objectives have been achieved.

Another issue regarding the monitoring of certain species on the JDSF is the difficulty of finding breeding pairs. For example, two species of woodland hawks, the Northern Goshawk and Cooper's Hawk are suspected to occur locally.

Within their range in the Pacific states, Goshawks are typically birds of interior montane forests. They are exceedingly rare in the coastal and near-coastal forests. Consequently, little is known about
12 habitat requirements for them in this area. In the exceptional event that a nest is found, careful and timely monitoring will be necessary to ensure that management activities do not preclude its continued use.

Conversely, breeding Cooper's Hawks are widespread in northwestern California, and their nesting habitat appears quite varied. Despite their occurrence in reasonable numbers in summer ; birds of this species can behave in secretive fashion, betraying the proximity of an activity center only when an intruder makes close approach. For each of these species (as well as for many others), seasonally
13 appropriate surveys employing widely-accepted techniques appropriate for detecting these species should be performed by trained surveyors. The typical 'THP-level survey'–essentially, asking that a forester 'look up into the trees' while doing pre-harvest planning such as tree marking, sale layout, or road location—simply cannot suffice to provide reliable information on the presence or apparent absence of these birds.

One of the problems inherent in assessing the affect of forest management on the wide variety of species present is the lack of survey information regarding many of these species. Some specific examples from the DEIR follow:

Page 253

> The Vaux's swift is a common summer resident and nesting species in northwestern California (Harris 1996). In Mendocino County, there are a number of sightings for the coastal area, especially near Russian Gulch, Van Damme, and Standish Hickey State Parks; but in the interior portion of the county records are less frequent (Sterling and Patton 1996). Vaux's swifts have been recorded on JDSF.

Page 254:

> In northwestern California, the purple martin is an uncommon summer resident and nesting species (Harris 1996). Although it has not been recorded within JDSF, there are records of purple martin occurring in the vicinity (CNDDB 2002, G-P 1997).

14

Page 255:

> Harris (1996) considers the yellow warbler a locally common summer resident and breeder. Yellow warblers have been occasionally observed on JDSF. Kitchen (1992) reports one in a redwood stand (CWHR 3D) and CDFG (1996) reports one near the road leading to Chamberlain Creek Conservation Camp.

All three of the preceding species could be regular components of JDSF, but the existing information does not indicate their present status, making it very difficult to assess the effect of timber management on local populations. These are species whose decline has been documented. Continued management without population data is problematic.

An important challenge facing foresters and allied land management professionals in northern California today is the management of extensive, varied stands of regrowth redwood and Douglas-fir. These even-aged stands, created chiefly by commercial activities, will -- if left unmanaged -- take many hundreds of years to reach late successional status. Acceptable and innovative management practices exist which may shorten this process. Such 'New Forestry' management practices often come under public scrutiny--as well they should. Properly gauged against a meaningful standard (i.e., a reference condition), an open analysis of both the apparent successes and failures of various management scenarios and practices can become one of the most effective tools available in the education of foresters and public reviewers alike. A further benefit of undertaking and continuing 'common species' monitoring is that these data can be used to educate members of the public about the direction, intent, and desired outcome of forest management.

15

2. Biodiversity:

One of the stated goals of the DMP that is emphasized in the DEIR is that of promoting Biological Diversity. On page 3 of the DEIR we see:

> WATERSHED AND ECOLOGICAL PROCESSES: Promote and maintain the health, sustainability, ecological processes, and biological diversity of the forest and watersheds during the conduct of all land management activities.

16

On page 223-224 of the DEIR we find:
Neotropical Migratory Birds

> According to DeGraff and Rappole (1995), and populations of many neotropical birds have declined. Several factors are believed to explain these recent and dramatic declines in forest-dwelling neotropical migratory birds: 1) loss and fragmentation of habitat, 2) brood parasitism by brown-headed cowbirds, and 3) contaminant poisoning (DeGraff and Rappole 1995).

> The relationship of neotropical migrants to forest tree species composition, diversity, and stand age is not well understood. Several studies have indicated that land managers should implement varied silvicultural systems to maintain a mix of habitat types, stand sizes, tree species, and stand age on the landscape level to accommodate a wide variety of Neotropical bird species. Although some studies in northern California indicate that overall bird species richness is not dependent on the age-class of vegetation, abundance of some bird species has been positively correlated with stand age (Ralph et al. 1991). Hagar (1999) found more bird species in logged riparian habitats (42) than in unlogged riparian habitats (27) in western Oregon. Notably, these studies show no difference in abundance between mature and oldgrowth forest, indicating that the difference in age between these two habitat types may not be significant for neotropical migrants and that both age classes contain required habitat features.

16 The preceding paragraph illustrates a dangerous line of reasoning. The analysis is based on the assumption that diversity is more important than a subset of species. While we have little local knowledge on this subject, in Alberta, Canada Scheick et al. (1999) found that "for many forest birds, density was lower in cut-blocks with residual trees and snags than it was in old-growth forest." in spite of the fact that "Within harvest areas where more trees, particularly large deciduous trees were retained, and when those trees were retained in clumps, bird communities were more similar to those found in old-growth forests." In that study, Scheick et al. (1999) detected 72 species of birds, 6 of which were found only in old-growth forests, while 38 were more common in old-growth than in harvest stands. Eighteen species were found only in harvested stands while 9 others were more common in harvest stands. Even though more species were found (= increased biodiversity) after harvesting activities, a subset of the ecological community was being selected against. It is precisely this reason that biologists feel that old-growth forest characteristics are of great value, especially in an area where they are rare across the landscape.

3. Old-growth trees and snags:

The DIER summarizes the value of old-growth and late seral forests for wildlife. On Page 4 we find:

> a. The harvest of old-growth forest may have significant effects on wildlife habitat. The DFMP identifies existing groves of old-growth and discusses protection of individual oldgrowth trees. Identified groves will be protected and young growth stands that are adjacent to specific groves will be managed to enhance the wildlife habitat values of the protected stands. In addition, approximately 23% of the forest will be managed to produce late-seral habitat elements often associated with old-growth forest. Most individual old-growth trees with characteristics valuable to wildlife will be retained.

And on page 218-219:

> According to the CWHR, over 90 vertebrate species that occur in Mendocino County prefer or require snags to fulfill a portion of their life history needs (2 amphibians, 54 birds, and 36 mammals) (CDFG 1999b).

17 The importance of residual old-growth trees is becoming more evident to wildlife biologists (see Hunter and Bond, 2001). If a goal is to restore late-seral characteristics to the forest, residual old-growth trees are THE most important component. In this region, it might take 150-200 years or more to gain late seral characteristics in a stand that has no residuals. In a stand that has some residuals, it may only take 50-70 years for late seral characteristics to become evident. This is a big difference. Wildlife species such as Red Tree Voles, Flying Squirrels (*Glaucomys* spp.), snag-obligate bats, forest-dependent salamanders, small owls and others that favor such forest characteristics as large trees, large limbs, large down woody debris, cavities for nesting and roosting, or extensive fungal communities will likely be recruited into forests with residuals much sooner than in stands which lack these characteristics. For this reason – and because late seral forests have become scarce in the region – we feel strongly that *no* old-growth trees should be harvested. We support the idea that old-growth trees are best designated by age and not size.

17 The Vaux's Swift and Purple Martin are secondary cavity users are believed to be undergoing widespread population declines in California. The retention of suitable existing cavity trees—as well as the recruitment of future cavity trees—is an imperative element in any meaningful conservation scheme which targets them. It is our opinion that this retention and recruitment should not be limited to conifer species. Large mature hardwoods possessing appropriate cavities—or exhibiting the likelihood of doing so in the future--can also provide nesting cavities for these and other species dependent on this specialized and uncommon habitat. Ideally, such trees should be windfirm and protected from effects of timber harvest.

4. Edge Effect

Page 217:

> Stand size and degree of fragmentation influence the value of late-successional stands to wildlife species. Fragmented forests composed of many small stands have a high ratio of forest edge to interior forest. A number of forest structure and environmental changes occur at the edges of forests that may reduce habitat value for some wildlife species while increasing the value for others. At forest edges, wind disturbance increases, temperature and humidity are more variable, and canopy cover and vegetation type can substantially differ from that of the interior forest (Chen et. al. 1992, 1993, 1995). Predation and parasitism on forest-nesting birds can also be greater along a forest edge relative to more interior forest areas (Brand and George 2000). On the other hand, some prey species, such as the duskyfooted wood rat, occur in greater densities in brushy stands and early-successional habitats (Sakai and Noon 1993) and are known to occur in early successional stands on JDSF (Fitts 1991). Woodrats are an important prey source for northern spotted owls, a late-successional nesting bird (Thomas et al. 1990, Zabel et al. 1995). In general, a mosaic of late, mid, and early-successional forested habitats will provide habitat for these and a wide range of other wildlife species.

Timber harvest in northwestern California has traditionally involved the complete or near-complete removal of large blocks of trees. This process has occurred clearcut-by-clearcut, often effecting removal of nearly all taller trees at a watershed or landscape level. Such harvest practices have resulted in the creation of extensive 'edge' habitats. It can safely be assumed that wildfire, disease, massive windthrow, and large-scale soil slumps likely have always 'maintained' a fluctuating amount of natural edge. However, the wholesale creation over the past 150 years of large, generally polygonal openings characterized by the juxtaposition of mature/old-growth timber with early seral floral and faunal communities has altered--and continues to alter--the species composition and ecology of formerly intact stands.

Forest fragmentation and the effects of greatly increased 'edge' are issues to be considered hand-in-hand. With the shift from traditional forestry practices to 'New Forestry'--and a high level of concern for species and populations at risk from the actions of man--this issue has gained the attention of an increasing number of foresters, wildlife managers, and ecologists.

Some of the ramifications of the 'edge effect' upon forest communities are readily perceived. Within several hundred feet of a typical clearcut edge, a stand of trees will experience degradation or outright loss of biophysical characteristics key to its integrated function as a forest. This phenomenon has been found to be most pronounced nearest the proximate edge, and less evident with increasing distance from the edge into the stand interior.

Among the conspicuous physical edge effects is windthrow of previously protected trees and snags near the stand perimeter. This occurs commonly at and near clearcut edges in northwestern California. It is most severe in sites which receive the brunt of late fall and winter storms. Rather than being a one-time event, it can occur repeatedly. Further, the windthrow of a whole rank of stems

at clearcut's edge allows windthrow or weakening to occur at an increasing distance from the original edge.

Less-apparent effects of dramatic edge occur as a result of increased sunlight penetration and increased air movement. These factors work in tandem to reduce foliage drip (believed by some researchers to be vitally important to the health of redwood forests), thereby reducing effective annual precipitation reaching the forest floor.

Duff layers and, later, humus layers suffer reduced moisture content, material contiguity, and potential to retain and transport water at and above the soil surface through percolation and capillary action.

Inconspicuous but critical populations of invertebrate forest-floor scavengers, 'recyclers', soil-aerators, and commensal mycorhizal fungi may become diminished or altered, as may populations of moisture-dependent salamanders and other amphibians.

Epiphytes demanding low levels of sunlight and constant high humidity may decrease on stem and limb surfaces experiencing increased sunlight and wind exposure; nutrient cycling, and the food chains intrinsic to such floral communities, may experience reduced effectiveness.

The establishment and spread of exotic plant and animal species is widely believed by ecologists to be among the five most significant general threats to native species. Aggressive alien plants find their best competitive niche in disturbed situations where native flora has been removed or set back to an early seral stage. While populations of alien plants are typically confined to disturbed or neglected land, it should be noted that their capacity to spread is great. In forested northwestern California, sites favoring establishment and entrenchment of exotic flora include roadsides, timber harvest landings, skid trails, and especially clearcuts. Given the invasive potential of many exotics, no forest opening is insulated from their effects. Scattered clumps of such species as the brooms, pampas grass, alien blackberry, foxglove, tansy ragwort and ivy tend to quickly consolidate and may nearly blanket some sites, impeding the development of native plants indigenous to the location. As most of the exotic plants occurring in this region are partial to full sun, the creation of large harvest openings without substantial tree retention abets their establishment. Individual tree selection or retention of a significant overstory component may diminish the effect of exotic plants by reducing available sunlight and by imposing barriers of mid-seral native vegetation in which exotics are less capable of rapid and extensive colonization.

It is the suspicion of many biologists that the greatly increased edge typifying our present-day forest-and-opening mosaic has benefited populations of corvids—particularly Common Ravens and Steller's Jays. While each of these species certainly does well in a minimally-fragmented forest environment, both are aggressive opportunists. As they are omnivorous, they stand to benefit from the increased species diversity and more complex age and structure mixture created by extensive forest edge. Both ravens and jays have been implicated as predators on Marbled Murrelets. They are also well-documented as predators on many forest songbirds. Populations of murrelets in California outside the major redwood parks are small, highly dispersed from one another, and occupy a highly-fragmented mosaic of remnant old-growth, late seral, and mature stands adjacent to, or interspersed among, large harvest openings and young regrowth. Within the breeding range of this state-endangered seabird, it is incumbent upon land managers to avoid exacerbating existing threats. By dint of creating or enhancing forest edge, even-aged management pursued on a landscape occupied (or potentially occupied) by Marbled Murrelets carries with it the possibility of increased numbers of Common Ravens and Steller's Jays, thereby increasing possibility of predation. Cooper's Hawks,

another predator of birds in a fragmented forest environment, may also benefit from increased edge; this accipiter hawk prefers to hunt within clumps of trees as well as in more open habitats.

Though they are no panacea with respect to edge creation, group selection harvest units nonetheless provide an opportunity to extract wood from the forest while imposing an 'edge impact' less profound than that of conventional clearcuts. At the same time, the placement and dispersal of group selection cuts should carefully considered, so that surrounding stands might retain as much core or 'interior' quality as possible. Retention of windfirm snags or clumps of residual hardwoods can lessen the effect of the opening by serving as islands of habitat for wildlife.

5. Even-aged management

On page 8 of the DEIR we find:

> To attain proper management of private timberlands in California, there is a need to investigate, develop, and demonstrate new and improved forest management methods to timberland owners and the public. The State forests serve this purpose while contributing to the economic stability of local communities by providing high yields of forest products, which sustain local employment and tax bases.

And on page 9:

> Jackson Demonstration State Forest was acquired for the purpose of demonstration of economical forest management. State Board of Forestry and Fire Protection policy states: "to attain proper management of private timberlands in California, there is a need to investigate, develop, and demonstrate new and improved forest management methods to timberland owners and the public.„ JDSF is the largest publicly owned forest in California with a research and demonstration mandate.

On page 12 of the DEIR we find a summary of the JDSF Research Goals including:

- Direct programs to the needs of the public, small forest land owners, resource professionals, timber operators and the timber industry
- Conduct monitoring of resource management activities to gauge effectiveness
- Develop methods to minimize conflicts inherent in the multiple use of forestland

On page 28 of the DEIR we find:

> **Goal #4. Forest Restoration:** Work toward achieving a balanced mix of forest structures and attributes in order to enhance forest health and productivity.
>
> **Objectives:**
> 4-1. Restore and decommission roads to minimize WLPZ and unstable roads.
> 4-2. Minimize sediment production from roads.
> 4-3. Increase the amount of late seral forest.
> 4-4. Add large woody debris to streams and enhance overall habitat conditions for salmonids.
> 4-5. Add forest structural elements to stands (snags, large trees, large diameter limbs, cavities, flat tops).
> 4-6. Minimize the influence of exotic plants and animals.

On page 59 of the DMP we find:

> Jackson Demonstration State Forest, given its geographic location, vegetation types, and demonstration mandate, is in a unique position to develop habitats that contribute to improvement in the population viability of certain species of concern and to protect or restore other forest values.

18 This is a great statement, and one that should guide all of the workings of JDSF—with one minor modification. Rather than limiting these objectives to "certain species of concern" these objectives ought to be expanded to include *all* species characteristic of the 'native' forest types.

19 Of urgent concern to us is the amount and extent of even-aged management proposed.. We believe that the pursuit of even-aged management cannot reasonably be justified on the grounds that the

19 public 'needs' to see such practices 'demonstrated'. It is nearly impossible to travel to the JDSF from any direction without bearing vivid witness to the effects of even-aged management on the surrounding landscape! We would argue that few segments of the public will benefit from yet more 'demonstration' of even-aged management; therefore, such forestry practices in any considerable degree cannot be construed as contributing to any heightened awareness or understanding. Further, how is the Forest able to support a claim that even-aged management provides research opportunities that cannot be availed elsewhere within the region? It would appear difficult to justify even-aged management from the standpoint of 'research', as abundant opportunities presently exist throughout northwestern California for research to be carried out under even-aged management scenarios. Are
20 there unique, specific, narrow-scope goals to be met through—and *only* through—even-aged management? This is the question that should guide even-aged management decisions on JDSF.

21 In the even-aged stands or variable retention units, how will management provide for sufficient 'legacy' of wildlife habitat elements?" A legacy implies the continuance of an essential quality beyond a life span or timeframe. Even-aged management typically involves removal or degradation of many of the biophysical elements which would constitute a 'legacy': large trees, misshapen trees, snags, potential snags, abundant large down woody material, extensive duff and humus layers, 'minor' tree and shrub species—as well as much of the fauna and flora which comprise older stands,
21 and whose persistence on a given site is crucial for population maintenance. How will it be known what a sufficient amount is? Please our discussion under Monitoring.

On page 42 of the management plan, there is a discussion regarding the uncertainty of the "habitat
22 corridor" concept. This is identified as a research priority, and yet the management plan generally places heavy emphasis on the WLPZs for these corridors. In fact, the DEIR does not treat this issue at all. How do we know that this will be appropriate? Plainly it is assuming a lot to suggest, explicitly or implicitly, that standard WLPZs can provide adequate dispersal or recruitment corridors. For the majority of mammals, amphibians, and other wildlife whose life histories typically take place across a broad landscape. discrete corridors flanked by openings do not typify preferred habitat. Further, we
23 argue that--owing to their inherent restricted size and nearly complete saturation with 'edge effect--WLPZs as proposed cannot suffice as mature/old-growth habitat for species dependent on such habitat in the same sense that larger, less-fragmented, midslope patches of similar habitat can.

RON LEVALLEY
Senior Biologist

EDUCATION
M.A. Biology, Humboldt State University, 1980.

B.A. Biology, Sacramento State College, 1969

MILITARY
U.S. Coast Guard, 1969-1973

AFFILIATIONS
American Ornithologists Union
(Life Member)
California Academy of Sciences
National Audubon Society
Pacific Seabird Group
Point Reyes Bird Observatory (Life Member)
Western Field Ornithologists (Associate Editor, Western Birds)
MRB Research Incorporated, Board of Directors

PROFESSIONAL WORKSHOP INSTRUCTION / PRESENTATIONS
Marbled Murrelet Survey Training, 1993-present
Snowy Plover Survey Training, 1997-present
West Nile Virus Dead Bird Surveillance Program, Bird Identification Workshops. California Department of Health Services. April 2002.
Cavity Nesting Workshop, Small Owls, Wildlife Society.
February 2002
Snowy Plovers on the Eel River. Plovers in Peril Conference. February 2002.
Wildlife in the Salt Marsh habitats. Workshop on Spartina densiflora, sponsored by US Fish and Wildlife Service, January 2002.
Falconiformes of Northern California Workshop, Selected species presentation and panel discussion, Wildlife Society. February 2000.

CERTIFICATIONS
Federal Bird Marking and Salvage Permit
Master Bird Banding Permit #22971
Threatened Species Recovery US Fish and Wildlife Service Permit # PRT-823807 (Snowy Plover)

Mr. LeValley is founder and Senior Biologist of Mad River Biologists Ron is probably best known for his knowledge about the identification and distribution of birds along the Pacific Coast. A lifelong interest in marine birds and mammals was enhanced by a long involvement with Point Reyes Bird Observatory beginning in 1966, including serving as a biologist at the Farallon Island research station in 1968 and 1979-81. As a professional photographer, Ron has compiled an impressive collection (over 30,000 images) of wildlife photographs that he uses for presentations and publications. One of Ron's outstanding attributes is sharing his knowledge and enthusiasm with others. He is particularly adept at explaining complex biological principles in understandable terms, a talent that he brings to his report writing and consultations with regulatory agencies.

PROJECT EXPERIENCE

Program Director. Marbled Murrelet Inland Survey Training
Ron has co-authored and coordinated a training program under the auspices of the Pacific Seabird Group's Marbled Murrelet Inland Survey Protocol. Virtually all of the Marbled Murrelet surveyors in California and southern Oregon have gone through his training program.

Program Director. Snowy Plover Management on the North Coast
When the Snowy Plover was listed in 1985 and subsequently found breeding on the gravel bars of the Eel River, Ron coordinated a comprehensive survey and management program that has extended to the northern three coastal counties. In cooperation with Humboldt State University's Wildlife Department, a long term research and management program has been operating for 5 years. Clients for management projects have included the U.S. Fish and Wildlife Service, Humboldt County Planning Department, California Coastal Conservancy, and a consortium of gravel operators on the lower Eel River.

Project Director Marbled Murrelet surveys.
Under Ron's guidance, over 3,000 inland surveys for Marbled Murrelets have been conducted for a variety of management and research projects. Clients have included Six Rivers National Forest, Redwood National Park, California Department of Fish and Game (OSPR), Pacific Lumber Company and many smaller timber management operations.

Project Director. Yurok Tribal Forestry Wildlife Management
Since 1993, Mad River Biologists has provided all of the wildlife management services to the Yurok Indian Tribe, Klamath CA. This has entailed a crew of 2-5 field biologists each summer, and the preparation of Biological Assessments for numerous timber management operation and housing authority land transfers. Presently he is coordinating the development of a 10-year reservation-wide wildlife management plan to complement the tribe's Forest Management Plan revision.

Founder and Director. Biological Journeys.
In 1979 Ron founded and for 15 years operated an ecotourism company specializing in marine mammals and island biology. His travel expertise extends from South America and the Galapagos Islands through Baja California to Alaska, northern Canada, Australia and Africa.

DAVID FIX
Biologist

A naturalist since childhood, Mr. Fix has devoted his life to the pursuit of knowledge and meaning in the outdoor world. Extensive forestry and wildlife survey experience in old-growth, in today's dynamic 'industrial forest' mosaic, in human-impacted lowland habitats, in the mountains, and at sea have given him a highly integrated understanding of animal and plant communities. Among his proudest achievements has been the mentoring and encouraging of many aspiring biologists. A well-honed perception of the abundance and distribution of birds has been the product of a lifetime spent seeking, watching, and writing about these creatures, many of which have high land-use management profiles.

PUBLICATIONS

Fix, D. and A. Bezener. 2000. Birds of Northern California. 364 pp. Lone Pine Press, Edmonton, Canada

Fix, D. 1990. Status and abundance of birds of Diamond Lake Ranger District, Oregon. Published online at www.orst.edu/pubs/birds/ +

Forty-eight notes on various topics in field ornithology in Oregon Birds, 1977-1992.

Subregional Editor for North American Birds, 1976 – present

Regular contributor to The Sandpiper, newsletter of Redwood Region Audubon Society, Eureka, California.

SPECIALIZED SKILLS & EXPERIENCE

Bird point counts
Time-constrained herptile surveys
Raptor surveys
At-sea and forest Marbled Murrelet surveys
Spotted Owl surveys
Bird banding
Dendrometry
Orienteering
Aerial Photo Interpretation

AFFILIATIONS

American Birding Association
Friends of the Eel River
Malheur Field Station
The Orion Society
Redwood Region Audubon
Siskiyou Field Institute

PROJECT EXPERIENCE

Marbled Murrelet Forest Survey Training and Evaluation Program
Lead Trainer
Helped develop and implement a program for training biologists, foresters and resource ecologists to conduct Marbled Murrelet forest surveys. Lead trainer in northern California since 1993.

Humboldt County Breeding Bird Atlas
Steering Committee Member, Atlaser, Co-author (in prep.)
Client: Cost Share Agreement with USDA Forest Service, Six Rivers National Forest and Mad River Biologists.
Helped conceptualize, initiate, and complete a comprehensive survey of breeding birds in Humboldt County, 1994-present. As a co-director of the project, aided formulation of protocol, designed forms, planned and executed field work, assisted with coordination of land-owner cooperation, input data, and wrote species accounts.

Yurok Tribal Forestry Wildlife Surveys
Biologist
Client: Yurok Tribe of California
Conducted Spotted Owl, Marbled Murrelet, mammal, and herptile surveys on proposed timber management parcels on the Yurok Indian Reservation.

Marbled Murrelet Demographic Studies
Biologist
Client: Oregon Department of Fish & Wildlife
Since 1993, participated in 4000 km of at-sea censuses and reproductive surveys of Marbled Murrelets from the Columbia River to Bodega Bay with Crescent Coastal Research of Astoria, Oregon. Observing from small craft, all murrelets and other seabirds were counted, aged, and their location and behavior noted. Assisted in developing aging criteria for basic-plumaged murrelets to facilitate estimation of adult/chick ratios from sampling.

Spotted Owl Demographic Study
Biologist
Participated in a long-term mark-recapture study of a population of Spotted Owls in Humboldt County, CA, with the Humboldt State University Foundation. Captured, banded, aged, and located nests and young of owls, and drew blood for laboratory analysis.

Letter RL-238 (Mad River Biologists)

The majority of the comments included in this letter are aimed at management practices proposed in the DFMP and are not applicable to the impact analysis conducted in the DEIR. Many of the comments provide insight and a different perspective on forest management practices, but are not considered comments on the DEIR. For example, the discussion on edge effect beginning on page 7 of the comment letter expounds on the discussion of edge effect included in the DEIR, but does not present a conclusion that is significantly different than found in the DEIR. For these reasons, General Response 1 is appropriate for many of the comments.

Response to Comment 238.1
Please refer to General Response 1.

Response to Comment 238.2
Please refer to General Response 1.

Response to Comment 238.3
Please refer to General Response 1.

Response to Comment 238.4
The DFMP does state target densities for snag retention, however, as described in the DEIR (p. 273), a mitigation measure geared towards retaining all snags was developed through the EIR process. Given the apparently low densities of snags on JDSF and the uncertainties of appropriate retention levels in the redwood region as pointed out in the comment, the mitigation to retain all snags is a conservative approach to meet the needs of snag dependent wildlife species. The adaptive management elements of the Forest Management Plan will allow managers to adjust the snag retention levels in the future should new information pertaining to appropriate retention levels in redwood forests be developed (DEIR, p. 49).

Response to Comment 238.5
Please refer to General Response 1.

Response to Comment 238.6
Please refer to General Response 1.

Response to Comment 238.7-238.13
In today's regulatory environment, the focus of wildlife management is largely on compliance with existing laws and regulations involving RTE and sensitive species. This focus is unlikely to change in the foreseeable future. In terms of adaptive management, the focus may be on RTE species, but the nature of the program is such that more common species may be included in the future. It is likely that there will be a period of several years before JDSF managers develop a working adaptive management program. For example, in Humboldt County, Pacific Lumber Company's (PALCO) HCP incorporated an adaptive management element, and it was only after several years of HCP implementation that PALCO began to understand how adaptive

management could be effectively used. Likewise, it will take JDSF managers several years to develop a functioning and effective adaptive management program. Part of this program will likely include various monitoring and surveying efforts. It would not be prudent at this time to develop a large expensive monitoring or surveying program that would produce large amounts of data that are expensive to collect and analyze, and difficult to interpret. Focusing on the legally required RTE species is a feasible and reasonable approach at this time.

Response to Comment 238.14
It is not feasible, nor is it necessary, to complete encompassing species surveys to support a population analysis for all sensitive species that may occur on JDSF as part of a program EIR analysis. Instead, a habitat-based analysis was conducted. This sort of analysis is appropriate for the program EIR completed for the landscape level management plan. The DFMP does not represent a land use change from the current use of managed timberland. The DFMP will provide for the retention of habitats that are very similar to current conditions, with specific emphasis on retaining and developing habitat elements that are generally accepted as beneficial to habitat diversity (snags, LWD, hardwoods etc.) It is reasonable to conclude that on a landscape basis, retention of habitat types that are similar to the habitat types that currently exist, or are more diverse than currently exist, will provide for the continuance of existing species populations.

Response to Comment 238.15
Please refer to General Response 1. The Silvicultural Allocation Plan in the DFMP was designed to allow the comparison of various management strategies across the landscape.

Response to Comment 238.16
Old growth groves and aggregations will be preserved, as will residual old growth trees as specified, with limited exceptions. Subsets of species that utilize this type of habitat will not be selected against. Also, please refer to Response WW-237.2.

Response to Comment 238.17
Individual old growth trees will be preserved with limited exceptions as discussed in the DFMP and DEIR. This includes old growth hardwoods as defined in the DFMP.

Response to Comment 238.18
Refer to response to comment 238.14 above.

Response to Comment 238.19 and 238.20
Even-aged management has specific economic and silviculture advantages that make it a valuable silvicultural method in the redwood region. This method will continue to be widely used by both small and large landowners. Developing alternative even-age silvicultural practices that maintain the economic and silvicultural advantages, while minimizing environmental impacts would be a significant achievement. JDSF is the only ownership in the redwood region where this sort of information can be developed.

The demonstration of various rotation ages and structure tree retention levels as proposed in the DFMP will be beneficial for many landowners in the redwood region. Other examples of what could be learned from the continued use of the even-aged silvicultural system as proposed in the DFMP include determining the most advantageous arrangement or orientation of retained structure trees. Others are: What species use clumped trees verses single widely spaced trees? What is the best size clump of trees to leave? How does slope and aspect affect wildlife use of retained structure? How does retained structure affect tree growth and stand development? What are the long-term affects or watershed scale effects of even-age management with structure tree retention verses uneven-aged management? These sorts of questions can only be answered in if even-aged management areas are included in the management of JDSF.

Response to Comment 238.21
As described in the DFMP and DEIR, old-growth residuals, snags, and LWD will be retained and provide "legacy" habitat elements. CDF has established target amounts of specific key habitat elements that are above the requirements of the FPR. Whether or not this will be sufficient is unknown because the term "sufficient" is arbitrary and, among other factors, species specific.

Response to Comment 238.22
Little information is available regarding the size, necessity, use, and value of corridors by the wildlife species potentially occurring on JDSF. Since approximately 20% of JDSF will be managed as late successional forest, approximately 2/3 of the remaining habitat will be managed under uneven-aged prescriptions, and between 5 and 30 trees will be retained in many of the even-aged units, habitat connectivity will not be restricted to the WLPZs on JDSF. Whether or not this management strategy is "appropriate" for JDSF is arbitrary, species specific, and would require extensive, long-term research. The CDF has established management standards for JDSF that are above the requirements of the FPR.

Response to Comment 238.23
Please refer to response to comment WW-237.8

JUL.24.2002 7:02AM NO.076 P.2

JUL 18 2002

JS-239

Conservation Biology Institute

CONSERVATION BIOLOGY INSTITUTE

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California Department of Forestry and Fire Protection
State Forest Program
Attn: Christopher Rowney
1416 9th Street, 15th Floor
P.O. Box 944246
Sacramento, CA 94244-2460

July 17, 2002

Dear Mr. Rowney:

After reading the Draft Environmental Impact Report (DEIR) for the Comprehensive Update to the Jackson Demonstration State Forest Draft Management Plan and most recent version of the Jackson Demonstration State Forest Management Plan Draft (dated May 17, 2002), I wish to submit these review comments for the public record.

My name is James R. Strittholt and I am director of the Conservation Biology Institute (founded in 1997) located in Corvallis, OR with a satellite office in San Diego, CA. Our institute is a science-based non-profit organization whose mission is to conduct applied conservation biology research and provide a variety of education and science services to the greater conservation community. We do not engage in advocacy; however, we routinely conduct studies and reviews from a conservation biology perspective. Our clients consist of equal proportions of government agencies and groups (including the federal, state, and local levels), other non-profit conservation organizations (e.g., World Resources Institute, World Wildlife Fund, and The Nature Conservancy), and the foundation community. We also occasionally work for the private sector.

I have enclosed my most recent curriculum vitae for the record, which outlines my professional credentials. In short, I hold undergraduate degrees in Botany (forest ecology emphasis), Zoology (wildlife biology emphasis), Science Secondary Education, and a Masters of Science in population genetics. In 1994, I earned a Ph.D. from Ohio State University in a self-designed multi-disciplinary program emphasizing landscape ecology, conservation planning, and computer mapping technologies. While a truly multi-disciplinary degree, I conducted most of my research and developed most of my technical skills from the Center for Mapping – a NASA Center of Excellence. While at Ohio State, I received numerous academic achievement awards including being chosen as a University Presidential Fellow during my final year. I have been involved in conservation biology research and planning since 1988 with a strong emphasis on forest ecosystems. Pertinent to the Jackson Demonstration State Forest, our institute published a book entitled, The Redwood Forest: History, Ecology, and Conservation of the Coastal Redwoods with support from Save-the Redwoods League in 2000 (Noss 2000), which included sections written by the leading redwood ecologists.

JUL.24.2002 7:03AM NO.076 P.3

The following comments are directed at those parts of the DEIR and preferred alternative management plan where I have specific expertise. I assume that all comments, citation materials, and enclosures be made part of the administrative record.

Sincerely,

James R. Strittholt, Ph.D.
Director/Landscape Ecologist
Conservation Biology Institute

Letter JS-239

Response to Comments 239.1 and 239.2
Page 60 of the DEIR contains discussion of regional watershed and conservation planning within "Section VI: Alternatives." Please refer to Response JA-175.17 and General Response 1.

Response to Comment 23.93, 239.4, and 239.5
To correct the text in Appendix 8B, page 11, and in order to be consistent with page 122 of the DEIR, the following language should have been included in the Appendix.

> Fish populations can be extirpated from watercourses and watersheds if conditions degrade to a point the stocks are no longer self-sustainable. However, nearly two-thirds of the entire land base within the JDSF was clear-cut and burned prior to the introduction of the modern FPRs. Historic activities included massive broadcast burning, road construction and log skidding in watercourses, splash damming, stream clearing, and complete removal of riparian canopy. No effort was made to protect fish stocks at that time and populations did suffer. During the first season of operation the Noyo River egg taking station recorded a 1962-1963 coho run of 1,191 adults and 2,501 grilse. This indicates fish populations were able to maintain viability, albeit at low numbers, through that unregulated logging period. The potential effects to fish populations and aquatic communities from each alternative are significantly less than pre-modern FPR operations.

The text in Appendix 8B, page 11 will be changed to reflect the wording in the DEIR.

Instream habitat for salmonids has been on a recovery trend as seen in improvements in overstream canopy closure, V* measurements, reductions in the percentages of fine sediment in spawning gravel, and increases in pool depths. These improvements have occurred while the JDSF was operating under the 1983 management plan and standard FPR. The current DFMP, which contains many protection measures that exceed the FPR, will not retard this recovery trend and will likely enhance it. Measures that contribute to the recovery trend include, but are not limited to: 1) the Road Management Plan that will significantly decrease sediment delivery from roads and eliminate salmonid migration barriers; 2) no-cut zones on all Class I and II watercourses; 3) basal area and canopy retention standards that exceed FPR; 4) no-cut or "thin from below" silviculture to enhance the development of large trees along fishbearing watercourses where LWD loads do not meet target levels; 5) development of late seral forest conditions within the WLPZs and other special concern areas; 6) use of uneven-aged management on over two-thirds of the forest to develop a multi-layered stand that will be characterized as WHR 6; and 7) use of a Certified Engineering Geologist during THP design as per the guidelines stated in the DEIR. See the DFMP and DEIR for other protection and

mitigation measures. It is reasonable and logical to state that improving habitat conditions and implementation of measures that could accelerate recovery trends would not result in a decrease of a species.

Response to Comment 239.6
The DFMP identifies the current data and information management with staffing and budget on pages 39-40. On pages 84-85 additional staffing and budget benefits are discussed as part of the Plan implementation which would include position(s) to assist in the processes of administrative work, and page 93 describes the State Forest Data Bank to be developed during the Plan period. It is clear that forest managers have identified the need to provide for a method of data collection, documentation and providing for access to information obtained.

Response to Comment 239.7
On page i of the DFMP (Table of Contents), in the Desired Future Conditions and Planned Management Chapter 3, it clearly indicates Wildlife and Ecological Processes is a section beginning on page 59, and Watersheds section begins on page 69.

Response to Comment 239.8
The objectives listed under Goal #3 of the DEIR (page 28) are keyed to the Desired Future Conditions and Planned Management chapter 3 in the DFMP page 41.

Response to Comments 239.9-239.15
Please refer to General Response 9. The cumulative effects analysis that is inherent in the programmatic EIR approach has been summarized and presented in one section for clarity. The DEIR includes a section on CWE relating to peak flow and sediment delivery/transport.

Response to Comment 239.16
On page 430 of the DEIR, a strategy describing monitoring and adaptive management implementation is contained in 5. Mitigation Monitoring.

Response to Comment 239.17 and 239.18
Please refer to General Response 1. Monitoring, as provided for in the CEQA guidelines, has a very narrow focus and refers to mitigation monitoring. Mitigations proposed in an EIR need to be monitored to ensure they are implemented. Monitoring, as included in the DFMP, is much broader, including monitoring of general environment conditions and trends. Monitoring and adaptive management, both formal and informal are used by forest resource managers on a daily basis. While past monitoring and adaptive management in JDSF has been focused on timber related issues such as forest inventory, the DFMP makes a commitment to broaden the scope to include a wide range of other environmental factors. While there may be some disagreement over the details of what is monitored and how the results will play into adaptive management, the commitment to the process is likely to have a long-term beneficial effect on environmental conditions. The EIR assessed monitoring and adaptive management when impacts were assessed as part of the DFMP.

Response to Comment 239.19
As the Plan provides for adaptive management, if the properties suggested for consideration in long-term monitoring are determined necessary by the Forest Manager to provide an indication to gauging ecological integrity, they can be added into the monitoring program at an appropriate time (DEIR, p. 49).

Response to Comment 239.20
Monitoring of plan provisions are not limited to outside of even-aged management areas (Caspar Creek Trails, etc.). Please refer to Responses 239.16 and 239.19.

Response to Comments 239.21 and 239.22
Please refer to Responses 239.16, 239.18 and also 239.19.

Response to Comment 239.23 and 239.24
Please refer to General Response 1.

Response to Comment 239.25
Nutrient cycling and soil fertility are expressed as a function of site quality, which is monitored through the continuous forest inventory system described in the DFMP on page 101.

Response to Comment 239.26
A step by step of the methodology used for the hydrologic peak flow analysis is detailed beginning on page 2 of Appendix 11. It utilizes the same methodology the Forest Service Redwood Sciences Lab explicitly described in the Review of the Freshwater Flooding Analysis (Lisle et al. 2000). The data for the analysis was obtained from JDSF GIS of harvesting (1980 to 1999) to model past and proposed future harvesting with respect to peak flows. Primary references utilized in the hydrologic analysis include Lewis et al. (2001) ***Impacts of Logging on Storm Peak Flows, Flow Volumes and Suspended Sediment Loads in Caspar Creek, California***, and related studies compiled in ***The Caspar Creek Story (***6 May 1998; Ukiah, California. General Tech. Rep. PSW GTR-168).

Response to Comments 239.27 and 239.28
Please refer to Response JS-239.26.

Response to Comment 239.29
Biodiversity is an important component of ecosystem health. Biodiversity will be provided for by the variety of management practices (from no harvest in old-growth stands and pygmy forest to a variety of harvesting regimes) that are proposed under the DFMP. The varied management practices will provide a variety of habitats, seral stages, and biotic and abiotic features that will allow for a diverse composition of taxa and genotypes across the JDSF.

Response to Comment 239.30
The DEIR does not conclude that Alternatives C, D and E will protect old-growth in similar ways (DEIR page 274, etc.).

Response to Comment 239.31
Although the WLPZs may not provide optimal habitat for late successional forest interior species, such as the marbled murrelet and Pacific fisher, they will provide habitat and/or key elements for a variety of other sensitive species such as red-legged frogs, tailed-frogs, Vaux's swift, red tree vole, olive-sided flycatcher, and osprey. In addition, the WLPZ coupled with the retention of old-growth groves and buffers, spotted owl and other wildlife species core areas, special treatment areas, and unstable slopes, larger blocks of habitat may be provided.

Although Chen et al. (1995) documented physical changes in microclimate gradients between 30-240 m (98-787 feet) into the forest from the edge (the width of the WLPZs in the DFMP range up to 150 feet), they concluded that there is no single answer to the question, ***"How wide is the area influenced by edge?"*** A number of factors, such as aspect, adjacent habitat (e.g. clearcut vs. selectively harvested habitat), local weather conditions, season, and wind, cannot be overlooked when evaluating the effects of edge on microclimate. In addition, the effects of microclimate on wildlife species vary and have not been extensively studied in this area.

Response to Comment 239.32 and 239.33
The habitat of wildlife species that are either known to occur or potentially to occur on JDSF were assessed and evaluated in the DEIR Please refer to response WW-237.8 and General Response 2.

Response to Comment 239.34 and 239.35
Please refer to General responses 1 and 2.

Response to Comment 239.36 and 239.37
See response to comments 239.19 and 239.20.

Response to Comment 239.38
The DEIR is a program EIR that by its nature reflects landscape level issues rather than project or site specific issues. Also, please refer to General Response 6.

Response to Comment 239.39
Please refer to Response WW-237.8 and General Response 1.

Response to Comment 239.40
Within the Biological Resources section pages 107-290 of the DEIR, discussions on ecological processes within the environmental settings are provided. Aquatic resources, botanical resources, timber resources, forest protection, wetlands, and wildlife habitat sections contain discussions on ecological processes involved. Further discussion is provided in Appendix 8.

Response to Comment 239.41
Wildfires (uncontrolled) are discussed within the Hazards and Hazardous Materials Section due to inherent risk of impacts to loss of timber, loss of wildlife and habitat, water quality, slope stability, and human related impacts – loss of life and property, per policy and guidance provided by CEQA (Public Resources Code (PRC) Section 21001 and the CEQA Guidelines).

Because of the values involved, wildfire in the JDSF setting is not regarded as a beneficial ecological process. However, fire is recognized as an important component within the redwood forest type ecosystem and a discussion on prescribed fire is included on page 316 of the DEIR.

Response to Comment 239.42
Table 41 on page 328 of the DEIR indicates that implementation of Alternative E would be expected to provide less fire protection due to less road maintenance and fire prevention techniques such as fuel break construction. Table 41 also indicates that mitigation is feasible.

Response to Comment 239.43
Please refer to Response AF-93.3.

RH-240

Save-the-Redwoods League

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July 18, 2002

JUL 1 8 2002

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OBJECTIVES
1. *To rescue* from destruction representative areas of our primeval forests.
2. *To co-operate* with the California State Park Commission, the National Park Service, and other agencies, in establishing Redwood parks and other parks and reservations.
3. *To Purchase* Redwood groves by private subscription.
4. *To foster* and encourage a better and more general understanding of the value of the primeval Redwood or Sequoia and other forests of America as natural objects of extraordinary interest to present and future generations.
5. *To support* reforestation and conservation of our forest areas.

Chris Rowney, Program Manager
Demonstration State Forests
California Department of Forestry
Post Office Box 944246
Sacramento, CA 94244-2460

Dear Mr. Rowney:

JACKSON DEMONSTRATION STATE FOREST
DRAFT MANAGEMENT PLAN AND DEIR

On behalf of the Save-the-Redwoods League we provide the following comments regarding the Forest Management Plan (FMP) for Jackson State Demonstration Forest (JDSF) and the draft Environmental Impact Report (DEIR) regarding the plan.

Regional Importance of Jackson State Demonstration Forest: The League's analysis of the coast redwood throughout its natural range suggests that the FMP and DEIR understate the regional importance of JDSF. *The Redwood Forest*[1] underscores the importance of protecting representative samples of the forest well distributed throughout the range of the coast redwood. It identifies three regions based in part upon underlying genetic differences (see page 265). Jackson Demonstration State Forest lies more or less within the center of the geographic range of the coast redwood. It is the only significant area of redwood forest in public ownership north of San Francisco Bay and south of Humboldt County. According to Reed Noss, a leading expert in the field of conservation biology, former editor-in-chief of the peer-reviewed journal Conservation Biology and past-president of the Society for Conservation Biology:

> "protection of redwoods in parks and other reserves has not sampled the various [forest] associations equally. Some types of redwood forest are unrepresented. For example, 10.75 percent of redwood forests in the southern section are in the highest category of protected area, compared to 5.76 percent in the northern section and only 1.36 percent in the central section." (page 265)

[1] Noss, R. 2000. The Redwood Forest: History, Ecology and Conservation of the Coast Redwood.

This is recycled paper

Chris Rowney, Program Manager
July 18, 2002
Page 2

We would suggest an expanded treatment of the regional importance of public land at JDSF in the FMP and DEIR.

2 **Protection of old-growth trees in JDSF:** Over the past 150-years approximately 96% of the original ancient redwood forest has been logged at least once. The ancient redwood forest is a non-renewable resource. The League would urge protection of as many of the remaining old growth forest fragments within JDSF as is possible. Significant benefits could be achieved by designation of zones around all old-growth trees where management focuses on restoration of late-successional characteristics to protect the remnant ancient forest from deleterious environmental effects. We would suggest that any removal of old-growth trees be identified in the DEIR as a significant adverse effect.

3 **Protection of older, high quality redwood forest:** Because old-growth redwood forest is so rare throughout its range, the League believes that our best hope of recruiting additional late-successional habitat is to retain all older redwood forest stands. Although the plan discusses development of late-successional habitat, it is our understanding that it also proposes logging several areas of high quality redwood forest. We would suggest that the significant benefits from retaining all existing high-quality redwood forest be the starting point for recruiting additional late-successional habitat at the earliest possible juncture. Accordingly, any removal of high quality redwood forest would appropriately be identified in the DEIR as a significant adverse effect. As noted in the DEIR the plan commits to managing "identified forest areas to achieve that goal in as short a timeframe as possible" (page 172, paragraph 2). The League appreciates and agrees with the appropriateness of designation of the Woodlands STA for late-seral forest development. Since the Woodlands does not have a large proportion of the oldest second-growth forest in JDSF, it would appear appropriate to extend the "late-seral development area" to include all of the oldest remaining stands. The maps appear to indicate that, instead, the oldest stands are slated for even or uneven aged management.

4 We are also concerned that "edge-effects" are experienced in narrow ribbon-like stands of late-seral forest designated along primary watercourses are not adequately discussed. Aside from the 2,224-acre Woodlands STA we understand most of the rest of the late-seral designated forest lays within class I and class II watercourse protection zones. While we support watercourse protection, these narrow zones do not function as effective late-seral forest zones – "the physical environment near edges differs from that in forest interiors, with microclimate generally drier, brighter, and more windy"[2]. Many sensitive species need "large, intact blocks of habitat" and the "best management strategy for these...species is ...to maximize the amount of un-fragmented forest in the landscape"[3].

5 We suggest that the maps in the DEIR be modified to allow the reader to more clearly determine where the highest quality forest habitat is. One is left assuming that the highest quality forest habitat is a sub-set of the forest mapped as >18"D. A comparison of figure F (Vegetation Management Class), figure H (Special Concern Areas) and figure M (Silviculture Allocation) suggests that most of the mapped 18"D is slated for harvest, the reader is left with the conclusion that most of the higher quality

[2] Noss, R. F. and Cooperrider, A. Y. 1994. Saving Nature's Legacy: Protecting and Restoring Biodiversity. Island Press.
[3] Ibid.

Chris Rowney, Program Manager
July 18, 2002
Page 3

forest habitat is likewise being logged. It is worth noting that an 18" dbh redwood in this region could be as little as 20 years old, while an 80-100 year redwood might approach 6' dbh. Based on my 10-years experience I am confident that maps could be easily enhanced to present critical information more clearly.

Habitat connectivity. Over the past 150-years there has been a type-conversion in the redwood forest from an older forest, to a sea of young forest with isolated older fragments interspersed. Again, to quote Noss:

> "Evidence is mounting that redwood forests, like many other ecosystems, cannot perpetuate themselves as small, isolated fragments in human-altered landscapes. Such fragments lose diversity over time" (page 2)

We encourage the plan to identify habitat connections between (a) old-growth and higher-quality habitat within JDSF; and (b) between JDSF and higher quality habitat on nearby public land. In the near future it is expected that the lower portions of the Big River estuary will be acquired by State Parks. Much of this is older forest with higher-quality habitat. We encourage you to consider this in the plan.

Increased stream protection. The stream buffers proposed in the plan are not as protective as those recommended by the National Marine Fisheries Service and the US Forest Service for this region. We encourage the plan to consider stream protection at least equivalent to those recommended by these federal agencies. We also note that the current plan places inadequate importance on protection of headwater streams (class II and class III). These streams are often important transport reaches that contribute structural components (large-woody-debris) to the stream system and are generally the source of the coolest waters (Noss, 2000. page 191). If disturbed they can be the greatest source of fine sediments with disastrous consequences for successful salmonid spawning (ibid). The DEIR would benefit from discussion of this issue.

Federal Recovery Plan for the marbled murrelet. Jackson State Demonstration Forest lies within recovery zone 5 (Mendocino) and is identified as critical habitat unit CA-07-a[4]. Zone 5 has a very small nesting and at-sea population and is deemed important to bridging the current distribution gap between Humboldt county and Santa Cruz county. The recovery plan[5] states:

> "The maintenance of this population [Zone 5] will require considerable cooperation between State, Federal and private management representatives. Recovery efforts in this Conservation Zone could enhance the probability of survival and recovery in adjacent Conservation Zones by minimizing the current gap in distribution" (page 129)

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[4] Federal Register, Part II, Department of Interior. Friday May 24, 1996.

[5] U.S. Fish and Wildlife Service. 1997. Recovery Plan for the Threatened Marbled Murrelet (*Brachyramphus marmoratus*) in Washington, Oregon, and California. Portland, Oregon. 203 pp..

Chris Rowney, Program Manager
July 18, 2002
Page 4

The League sees a leadership role in the recovery effort for marbled murrelet for state agencies charged with protecting our precious state resources.

9 **Research and Monitoring**. There is an exciting opportunity at JDSF to enhance our understanding of forest restoration. Since it was established JDSF has focused on demonstrating the "economical management of timber, predicated upon waning supplies of private timber". JDSF was established as the world was recovering from the scourge of the World War II. At this time, development of larger trucks and tractors was shifting redwood logging from railroad to tractor-truck logging. The new technology and new mills enabled loggers to cut more trees at an accelerated rate. JDSF contributed to our understanding of these new techniques. The world, and the redwood forest, are now different. We are currently challenged to restore heavily logged forests and to protect and promote recovery of endangered species while providing a sustainable supply of timber. There is an excellent opportunity at JDSF to refocus scientific research to address these critical questions.

The League recently completed the acquisition of 25,000 acres of forestland at Mill Creek for addition to the State Park system. This land, which has been industrially managed for many years, will be the focus of a sustained restoration effort over the coming years. It is located near the northern limit of the coast redwood. There is an excellent opportunity to develop a comparative research framework at JDSF and Mill Creek to compare and contrast forest restoration in two different locations in the redwood range. What we learn at these locations would be of great utility for forest managers throughout the redwood region. We encourage CDF to embrace this new opportunity.

The California Department of Forestry and Fire Protection is presented with a unique opportunity to forge a new path for Jackson Forest to meets the State's changing needs. Management at Jackson Forest can make a significant contribution to the protection of the redwood forest and the plants and animals that depend upon it, while providing new opportunities for research, education, and compatible public use. We encourage you to embrace this opportunity. If you have any questions please do not hesitate to contact me at (415) 362-2352 or rhartley@savetheredwoods.org.

Sincerely,

Ruskin K. Hartley
Conservation Planner

RKH/rkh

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Letter RH-240

Response to Comment 240.1
Please refer to the DEIR page 9, Legislative Mandate. JDSF was established as a State Forest as a representative example of the redwood region. The regional importance of this State Forest is discussed and emphasized throughout the DFMP and the DEIR.

Response to Comment 240.2
As described in the DFMP and assessed in the DEIR, all old growth groves and old growth aggregations will be retained, and individual old-growth trees will be treated as specified in the DFMP. In addition, please refer to General Responses 1 and 2.

Response to Comment 240.3
The oldest stands are not targeted for harvest as part of the DFMP. The short-term harvest schedule includes a variety of timber stands that are generally representative of the merchantable stands in the Forest. Please refer to Response WW-237.1 for further details.

Response to Comment 240.4
Please refer to Responses WW-237.8 and 237.9, and RL-238.22.

Response to Comment 240.5
The phrase "highest quality forest habitat" is subjective and can be interpreted in a number of ways. Native plants and animals require a wide range of habitats from forest openings to forest with late seral characteristics. The goals and objectives of the DFMP promote management practices the will lead to the retention and development of a diversity of habitats to support native species.

It is incorrect to conclude that most of the mapped 18-inch DBH is slated for harvest based on a review of Figures F, H and M. Please refer to Response WW-237.1 for further details.

Responses to Comment 240.6
Please refer to Figure H for a map indicating connectivity of old growth groves, late seral development areas, and riparian areas. Since "high quality habitat" as used in the comment is a subjective phrase open to a wide range of interpretations, it is not possible to identify such habitat connections. The adjacent public lands are composed of vegetation types similar in nature as those present on JDSF. The Big River estuary area has historically been an industrial owned timberland that has a similar land use history as JDSF. It consists of intensively managed young growth redwood forests, similar to JDSF. Please refer to Responses WW-237.8 and RL-238.22 for additional information.

Responses to Comment 240.7
A range of stream protection measures was considered in the EIR. Alternative "A" proposed no active management, providing steam protection in excess of the NMFS or USFS standards. Alternatives D and E proposed USFS FEMAT stream protections as mentioned in the comment.

Alternative B proposed the FPR stream protections and Alternative C included the DFMP protections. The DEIR found that DFMP stream protection would not result in significant environmental effects. The DEIR discusses LWD recruitment, water temperature and sediment delivery to watercourses as requested in the comment.

Responses to Comment 240.8
Please refer to General Response 1 and 5.

Responses to Comment 240.9
It is interesting to note that JDSF was obtained as cutover timberland with a primary goal of demonstrating how cutover land could be reforested and made fully productive. The comment notes, "***We are challenged to restore heavily logged forests and to protect and promote recovery of endangered species while providing a sustainable supply of timber.***" Since being acquired by the State, JDSF has been actively demonstrating how landowners can accomplished these exact objectives. The DFMP will allow JDSF to continue on this path with an increasing emphasis on wildlife, watersheds and ecosystem processes.

VT-241

Campaign to Restore Jackson State Redwood Forest
100 Manzanita Street
P.O. Box 1789
Fort Bragg, CA 95437

JUL 1 8 2002

July 18, 2002

Chris Rowney, Deputy Chief for State Forests
California Department of Forestry
1416 9th Street
PO Box 944246
Sacramento, CA 94244

Dear Mr. Rowney:

Accompanying this letter are my comments and supporting exhibits on the Draft JDSF Management Plan and Draft EIR for that plan.

Please enter my comments and supporting exhibits into the official record of the development of the Draft JDSF Management Plan and CEQA mandated review.

Sincerely,

Vince Taylor

Vince Taylor, Ph.D.
Executive Director

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Comments on the Draft Management Plan and Draft Environmental Impact Report for Jackson Demonstration State Forest

Vince Taylor

July 18, 2002

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Personal

Born May 14, 1956, Cincinnati, Ohio (citizen of U.S.A.)
Married, three children

Education:

1994 **Ph.D. Conservation Biology-Landscape Ecology** from The Ohio State University, Columbus, OH
Dissertation: "*A Regional Nature Reserve Design Using Geographic Information Systems for the Edge of Appalachia, Adams County, Ohio*"

1985 **M.S. Zoology** from Miami University, Oxford, OH
Thesis: "*Population genetics of yellow perch in Lake Erie and selected impoundments*"

1980 **B.S. Botany, B.A. Zoology, and Secondary Education Certification** from Miami University, Oxford, OH

Professional Experience:

August 1997-present. **President and Executive Director of the Conservation Biology Institute.** Corvallis OR http://www.consbio.org

January 1995-2000. **Founder and President of Earth Design Consultants, Inc.** Corvallis, OR

1994-1995. **Ecologist for North American Wilderness Recovery, Inc.** Portland, OR Responsible for scientific research and technical advising for conservation planning.

1992-1993. **The Ohio State University Presidential Fellow.** Columbus, Ohio
Responsibilities focused on research in conservation biology.

1989-1992. **Graduate Researcher: Center for Mapping, The Ohio State University.** Columbus, Ohio
Responsibilities included grant proposal writing, research project liaison, computer mapping and educational materials production.

1987-1989. **High School Science Teacher, Sycamore High School.** Cincinnati, Ohio
Courses taught included Biology I, Human Anatomy & Physiology, and Chemistry.

2 Estimates of Inventories

2.1 Failure to Provide Information Needed

In the areas of forest inventory, timber growth, and allowable cut, the DFMP fails completely to provide the information needed for informed decisionmaking and public participation.

Estimates of inventories and forest growth are the foundation upon which the DFMP rests. Conclusions of the plan about the impacts of proposed logging plans on forest health and sustainability depend critically upon the estimates of inventory and growth. Decisionmakers can have only as much confidence in the environmental conclusions of the DFMP as they can have in the accuracy of the forest inventory and growth estimates presented to them.

The inventory and growth data presented in the DFMP and DEIR are erroneous, seriously misleading, and wholly inadequate in detail and organization.

The importance of these data are so great and deficiencies in presentation and analysis so great that the DEIR fails to meet the minimum obligations of CEQA to provide a basis for informed decisionmaking and public participation in the development of the Management Plan.

2.1.1 Inadequate Data

At the most basic level, the DFMP and DEIR fail to provide the inventory data needed for informed decisionmaking and public participation. Changes need to be made in the presentation of inventory information in the Final Draft.

2 Every previous Management Plan, going all the way back to 1964, has presented tables and charts showing inventory estimates (volume and growth) and trends by forest compartment and tree type, distribution of acreage by age-class of trees, stems per acre for each diameter class, amount of inventory in each diameter class, inventory of trees by species, sawtimber growth by merchantability class and diameter class. The DFMP does not present any of these charts and tables, losing the valuable time-series of information and making it impossible for the reader to determine trends in the composition and totals of the forest inventory.

Further, because the new inventory system has about 2500 plots, no one can make any sense out unaggregated plot data. Yet, the only table of inventory presented in the DFMP (Table A5-1, Appendix 5) simply lists the 1997 (sic) inventory data for hundreds upon hundreds of forest areas, identified only by vegetation type and site class.[1] No key is given for the vegetation type, nor are the rows identified by geographical area or watershed. The data are not aggregated into the planning units used in previous management plans and compared to previous results; thus there would be no possibility of determining changes in forest inventory within watersheds even if the data were reliable. To create understanding of the results, data for the individual plots need to be aggregated in various ways and related to the geography and harvesting histories in the forest.

2.2 Probable Serious Errors in Inventory Estimates

2.2.1 New Inventory System Not Accurate and Reliable

There is strong evidence that the new inventory system substantially overestimates the true inventory of Jackson State Forest. An accurate, reliable inventory is absolutely crucial to development of appropriate harvest plans. The new inventory system fails to meet this requirement. Before an acceptable management plan can be developed, the inventory system needs to be corrected and empirically validated.

2.2.2 Failure of CDF to Provide Evidence and Analysis

In 1998, I presented to CDF substantial evidence that their recent estimates of forest inventory and growth were very much greater than the true values.[2] CDF's reply to my
3 evidence was not a convincing rebuttal.[3] At the very least, the evidence presented raised serious questions about the accuracy of the estimates. More recently, I have obtained internal documents from JDSF that 1) support the conclusion that the current inventory system is substantially overestimating inventory and growth, and 2) raise serious questions about the validity of the estimates produced by the current inventory system.[4]

CDF did not present any of this information in the DFMP or DEIR. Further, CDF had the data and capacity to perform additional analyses to resolve uncertainties and provide answers to questions about the accuracy of recent inventory estimates. Its failure to do so and to make the data and analyses available to the decisionmakers and the public is an unacceptable failing of the DFMP and DEIR.

To support the assertion that CDF has failed to provide information and analysis essential to informed decisionmaking and public participation, I have included a sampling of such information as exhibits attached to my comments. In following sections, I discuss and perform limited analyses of this information. Given my limited access to data and resources, the presentation here is indicative but not comprehensive. Much more could and should have been done by CDF before publishing the DFMP.

2.2.3 How Can the New Estimates Be Reconciled With the Old?

JDSF installed a new inventory system (IFI or Intensive Forest Inventory system) in 1989-90 to replace the former CFI (Continuous Forest Inventory) system. The new
4 system estimated 1990 inventories were nearly 50% higher than the 1984 CFI estimate. Its estimate of forest growth was 34 percent greater. Since 1990, all estimates of inventory and growth have been very substantially higher than those produced by the CFI system (and keep growing larger).

The estimates of inventory and growth on which the DFMP is based are enormously higher than the corresponding estimates made over a 25-year period by the previous inventory system. For example, the DFMP states, "…the most reliable evidence of forest
5 growth on JDSF. … [produced an] estimate of annual growth of approximately 65 million board feet, or approximately 1300 board feet per acre per year." These figures are **twice as large** as those produced by the old (CFI) system in 1984, the last year it was used. The 1984 estimate of growth was 655 board feet per acre per year.[5]

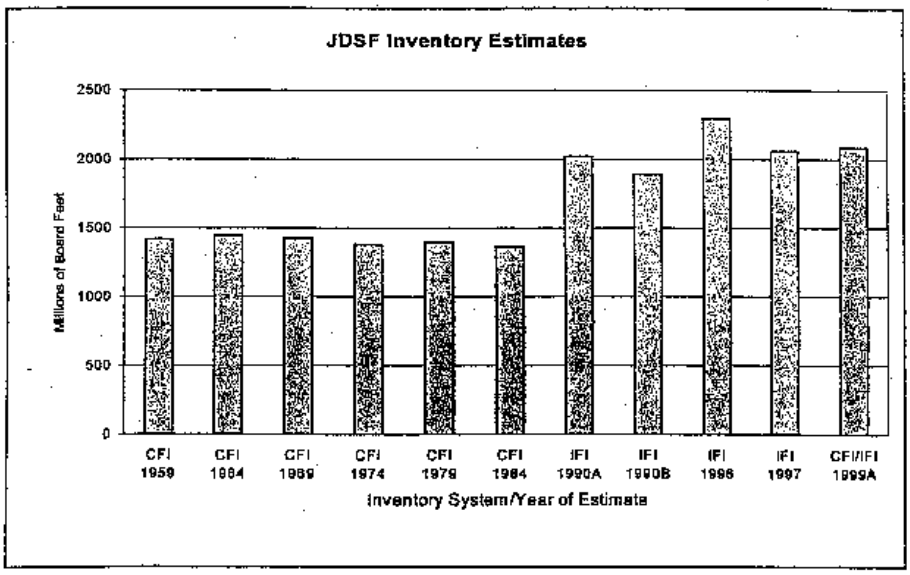
5 The fundamental question, which is not addressed by the DFMP or the DEIR, is, "How can the vastly higher recent estimates of forest inventory and growth be reconciled with the much lower, stable estimates that were produced over 25 years by the previous inventory system?" The new estimates are so much higher than the old stable ones, from 33 to 100 percent higher, as to raise an immediate doubt about their validity.

2.2.4 CFI Estimates Were Self-Consistent

As Figure 1 shows, during the 25-year period in which the former (CFI) inventory system was in place (1959– 84), the measured inventory was about the same at the end as at the beginning[6]. During this same period, JDSF policy was *always* to attempt to cut all incremental growth. If this policy had exactly succeeded, inventories would have remained exactly constant. Thus, the growth, harvest, and inventory numbers were generally *self-consistent*.

If anything, the CFI inventory system appears to have overestimated growth in the last twenty years, because inventories declined by 78 million board feet between 1964 and 1984. This decline of almost 4 million board feet per year would not have occurred if the estimated growth, which determined harvest levels, had not been higher than actual growth.

Figure 2-1



2.3 Are the New Estimates Credible?

Various estimates of inventory and growth have been made with the new (IFI) inventory system since it was installed in 1989-90. A number of the inventory estimates are plotted in Figure 1.

The first inventory estimate with the new system was for 1990. It is sharply higher that the previous estimate. Harvest levels from 1984 to 1990 were set at the estimated growth for that period, as was the long-standing JDSF policy. Thus at most a minor part of the estimated increase of 48 percent between 1984 and 1990 could possibly reflect actual forest growth. Rather, the higher estimated inventory is a product of the new inventory system.

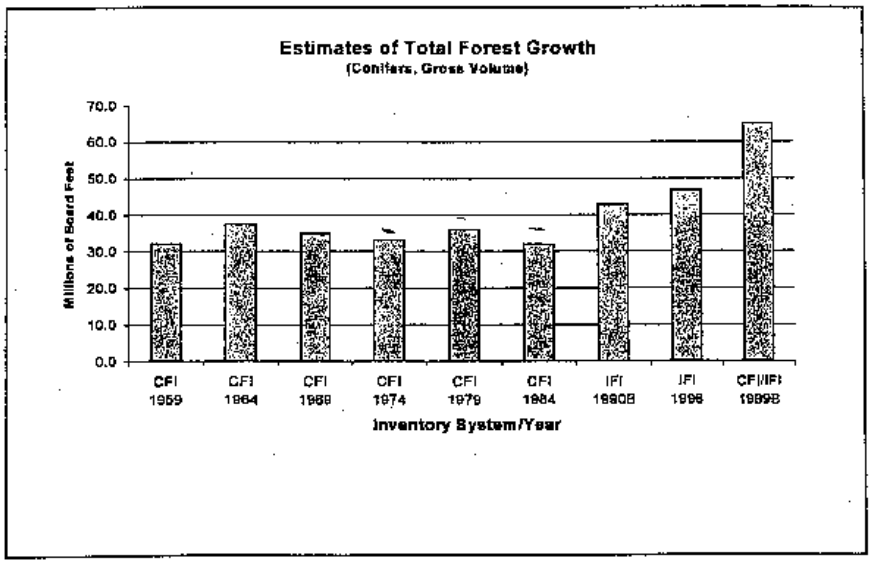
5

If the new system estimates are accurate, the old system produced substantial underestimates of the true inventory. Is this credible? To answer this, one needs to look at forest growth and harvests, because these are the determinants of changes in forest inventories.

2.3.1 Forest Growth Estimates

Figure 2 shows various estimates of forest growth. As was true for inventory estimates, the growth estimates of the new system are also much higher than those of the old system. Are the higher growth rates estimated by the new system consistent with the trends of inventories over time? The answer is, "No."

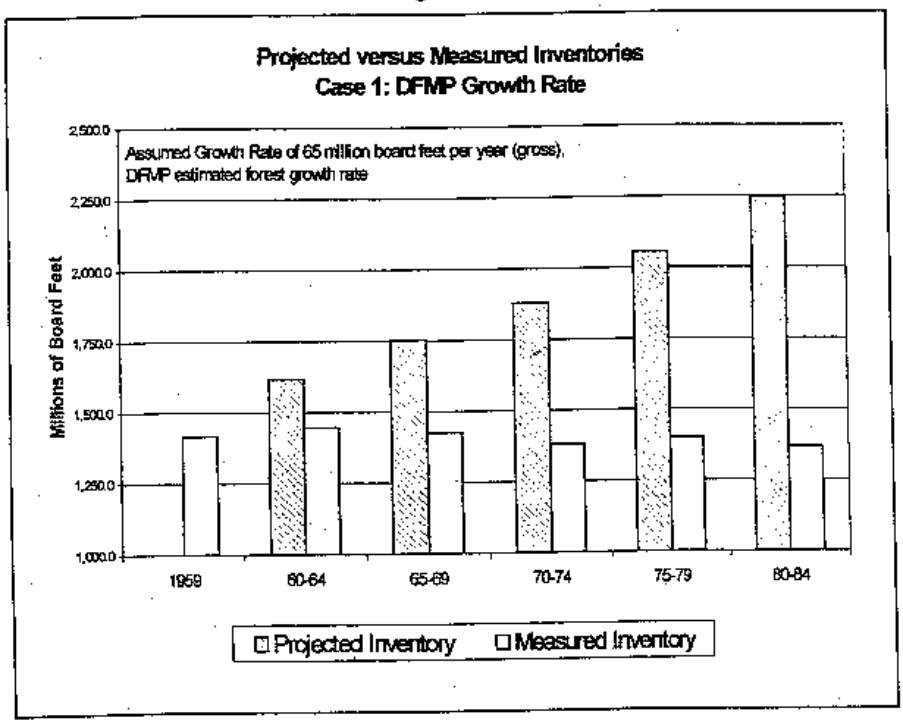
Figure 2-2



2.3.2 Simulated Inventory Projections

The inconsistency is seen most dramatically by assuming the DFMP estimate of forest growth of 65 million board feet per year (before harvests) is accurate and that this has been the real rate of growth since 1959, rather than the much lower rates estimated by the old inventory system. Estimated inventory growth during any given period equals forest growth (65 million board feet per year) minus actual harvests.

Figure 2-3



5

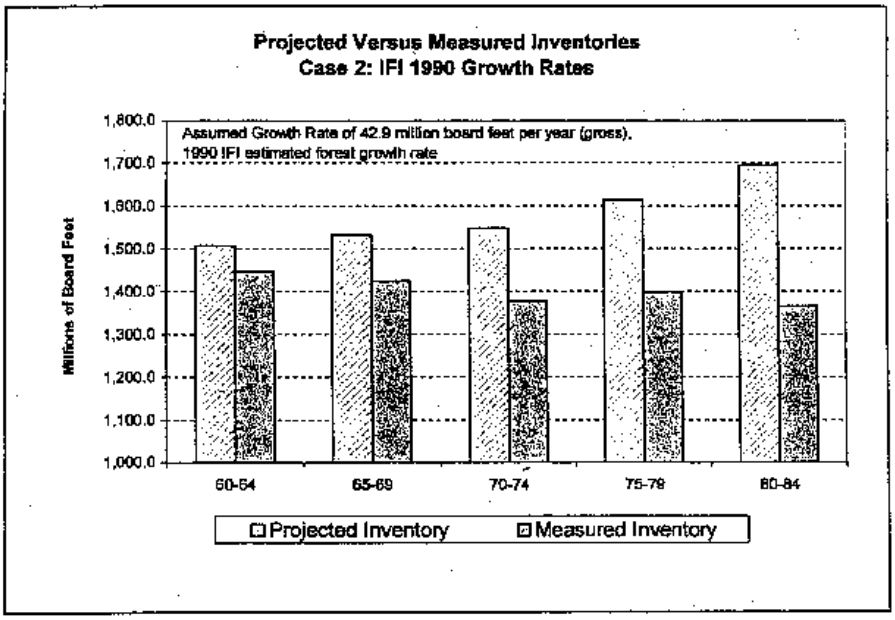
Figure 3 shows the projected inventories assuming the DFMP growth rate applied from 1959 through 1984. Projected inventories increase from 1417 in 1959 to 2248 in 1984, an increase of 831 million board feet. During this same period the measured inventories *decreased* by 52 million board feet versus those measured by the CFI inventory system.

It is inconceivable that a consistently applied inventory measurement system, applied to the same plots for 25 years, could show a decrease in inventories if inventories were actually increasing as projected in Figure 3. By the end of the period, the CFI system would be underestimating the "true" inventory by forty percent! This is just not credible.

Even the growth rate derived from the 1990 IFI inventory (42.9 million board feet per year) implies significant inventory growth between 1954 and 1984, as shown in Figure 4.

Projected inventories still grow by 267 million board feet while measured inventories were decreasing by 51 million board feet.

Figure 2-4



2.3.3 Fundamental Difficulty in Justifying Higher Growth Rates

The decline of inventories between 1959 and 1984 presents a fundamental hurdle that assertions of higher growth must overcome. This is a difficult hurdle, because even if actual inventories were higher, and the CFI levels needed to be adjusted upward to correct this bias, measured inventories would still have declined. Each measured inventory would be adjusted upward by the correction factor, so there would be no change in the pattern of decline.

The only way that true inventories could have increased while measured inventories declined would be if the measurement error of the system increased over time. For example, if the system were accurate in 1959 but underestimated inventories by 330 million board feet in 1984, the 1990 IFI growth rate could be supported. But, what could account for such a large growth in underestimation over the period? And how could it completely miss measuring the much higher rate of growth?

2.3.4 The CDF Argument for Increasing Underestimation Fails Empirically

In attempting to justify the higher growth rates, CDF came up with an ingenious explanation that could, theoretically, account for an increasing error in the old system over time. CDF's argument is, in summary:[7]

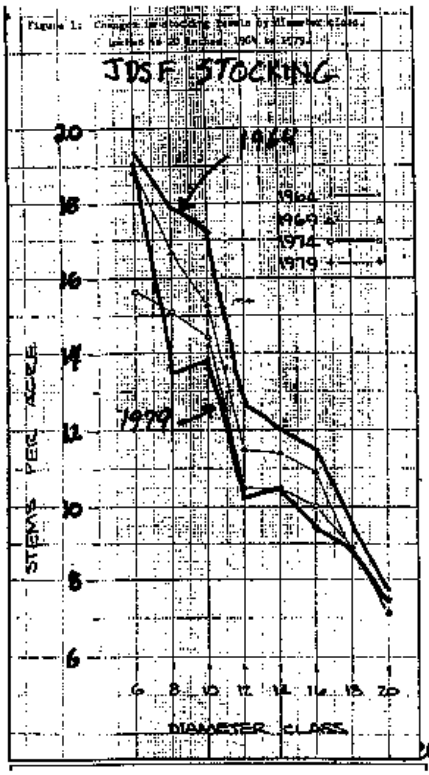
1. The CFI system estimated tree volume solely by measuring tree diameters, using relations between tree diameter and volume developed empirically at the start of the system (late 1950's).
2. If the average tree height for a given diameter increased over time, the CFI system would not capture this height increase and, therefore, would increasingly over time underestimate the true tree volume.
3. Tree heights for a given diameter will be greater in stands of greater tree density (more stems and/or volume per acre), because in denser stands, trees will put on more height growth than diameter growth.
4. Finally, CDF conjectures that forest stands in the west and central parts of the forest were growing denser. "The likely result is that as the young growth stands grew older and denser during this forty year period with an increasing amount of inter-tree competition, diameter growth decreased relatively disproportionate to height growth, changing the relationship of the diameter-height ratio of individual trees."

Although the first three points may be a correct *theoretical* analysis, its application to JDSF depends upon the *empirical* conjecture in point 4. This conjecture is refuted by JDSF's inventory data. Measured tree density increased somewhat between 1959 and 1964, but **from 1964 through at least 1979, stand density in JDSF was constantly diminishing.**

6 The decrease in density is striking for trees of DBH (diameter at breast height) less than or equal to 20 inches (Figure 5). For every tree-diameter class, there were fewer trees per acre in 1979 than in 1964. The differences are not so dramatic for larger tree diameters, but careful inspection of the original of Figure 6 shows that in 1964 there were at least as many trees in every size-class below 44 inches as there were in 1979. Note: JDSF has never published the results of its 1984 CFI inventory, but since the measured inventory declined significantly between 1979 and 1984, almost certainly stand density decreased further in that period.

When empirical data are applied to the CDF theory, it works in the opposite direction that CDF conjectured. To the extent that stand-density changes were affecting the accuracy of CFI measurements, they should have caused a growing overestimation of inventory, that

Figure 2-5



Vince Taylor

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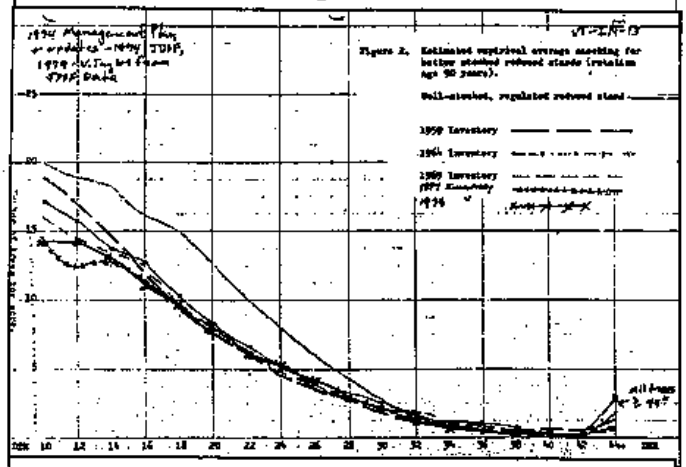
Figure 2-6



Source: VT-IN-13

is, true inventories would be increasingly smaller than those measured.

Taking into account changes in stand density reinforces a conclusion that true growth of the forest has been equal to or less than the CFI growth estimates.

2.3.5 Growing Overestimation of CFI Estimates Consistent with Data

A growing overestimation of inventory is consistent with the downward trend of measured inventories between 1964 and 1984, when the forest policy was to cut all measured incremental growth. Estimated growth was determined by the period differences in measured inventories. If inventories were increasingly overestimated, so was growth; thus harvest levels would be set higher than true growth, and this would cause true inventories to decrease.

2.3.6 Forest Manger Concerned that Growth was Overestimated

Additional evidence that the CFI system has overestimated growth is a 1976 letter from J. E. Sindel, Manager of JDSF, to the Deputy State Forester, quoted here in part:[8]

> After reviewing the 1974 CFI information and comparing growth figures with those of 1969, we find a decrease in average annual growth. This, we believe, is due to increased cutting in our second growth stands.
>
> With this in mind we believe our current annual cut should be held to about 26 million for the next few years. Our reasons are as follows:

1. Continued cutting of 28 to 30 million feet would decrease out growing stock to an even lower level resulting in a continued decrease in average annual growth....

The 1969 Management Plan was based on the 1964 CFI inventory. Forest growth (net) was estimated to be 34.9 million board feet, and the allowable annual cut was set to this amount. Actual reported harvests from 1970-74 averaged 31.8 million board feet per year. Between 1969 and 1974, the measured inventory decreased from 1464 to 1417 and estimated forest growth (net, all species) from 30.3 to 29.7 million board feet.

The 1974 Management Plan set the allowable cut at 30 million board feet (all species), based on 1969 inventory data. Even though the estimated 1974 growth was not much less (29.7 million board feet), the Forest staff evidently felt that actual growth was less than the estimate, as the letter quoted above states the staff's belief that cutting 28-30 million board feet per year would "decrease our growing stock to an even lower level."

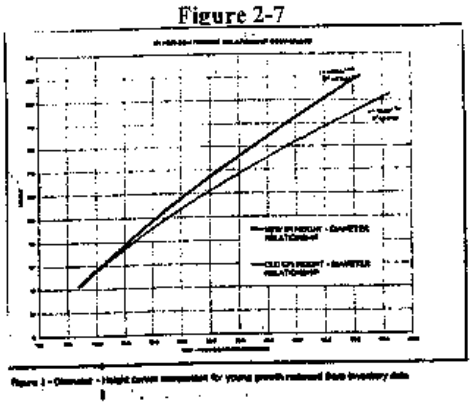
2.3.7 The New Empirical Relations between Diameter and Volume

6 In 1984, JDSF undertook an empirical ("Fall and Buck") study to update the relationship between tree diameter and volume. The intent was to incorporate the revised estimation parameters in the CFI system and to use them in estimating timber yields of Timber Harvest Plans.

These new diameter volume relations support the view that the CFI system underestimated inventories, but the magnitude of the implied underestimate is small, perhaps 10%.

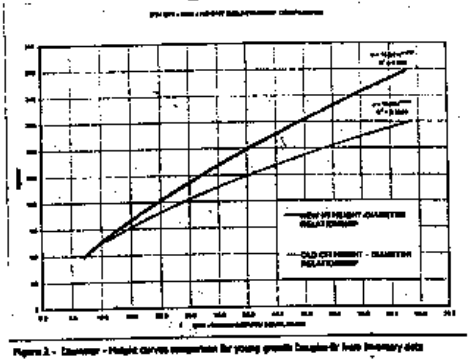
This estimate is derived as follows. A comparison between the new and old relations was published by CDF.[9] Two figures are provided, one for redwood and one for Douglas Fir, showing volumes as a function of diameter.

Figure 2-7



Source: VT-IN-11

Figure 2-8



Source: VT-IN-11

In the range where most merchantable trees lie (12' to 30" diameter), the new volumes appear to average about 7% higher for redwood and 15% higher for Douglas Fir. As

shown in Table 2-1, these differences translate into an average increase in inventory estimate due to the new equations of approximately 10%.

Table 2-A

Effect of New Volume Equations on Inventory Estimates

Type of Tree	Percent of Merchantable Timber (Approximate)	New Equation Volume Relative to Old	Adjusted Forest Volume (Percent) (Column 2 *times* Column 3)
Redwood	67	1.07	71.7
Fir	33	1.15	38.0
Total	100		**109.7**

2.3.8 New Data Eliminates Increase in New Volume Equations

A 1992 memo by John Griffen, senior forester at JDSF and at the time in charge of all timber sales, shows that further data eliminated most if not all of the increase in estimated inventory predicted by the new volume equations:[10]

6

> There is still some question about the reliability of our volume equations. When we abandoned the equations used in the old CFI in favor of those used in the new system we estimated a difference of 10-20% (the new ones estimating higher volumes). This seemed OK at first because the sales that we cruised with the new equations cut out pretty well. Then we started experiencing under-runs and incorporated form ratio into the volume equations to try to fix it. This mitigated the under-runs, but in the process we found that the equations with form ratio estimated volume at about 10% less that the equations without.

I estimate above that the new volume equations raise inventory estimates by 10%. Introducing form factor reduces them by 10%; thus after all of the changes, we are left with the CFI estimates unchanged.

2.4 DFMP Erroneous and Misleading Growth Estimate

The DFMP cites as "the most reliable evidence of forest growth on JDSF. … an unconstrained [before harvests] estimate of annual growth of approximately 65 million board feet, or approximately 1300 board feet per acre per year."[11]

The DFMP states that the cited timber growth estimate was actual measured growth: "The plot system was measured in 1989 and again in 1999. The difference between the measurements, accounting for harvest, produced [the figure cited]."[12]

2.4.1 Computer Projection, Not Measured Growth

<u>The assertion that the DFMP growth figure is based on measurement is erroneous and very seriously misleading.</u> An internal document from JDSF files show that the cited

growth estimate was developed from a computer-based model that *projected* the growth, rather than from actual measured differences in tree volumes between the two dates.

> This model [CRYPTOS] allows the user to grow a stand … for one or more five year increments…. In this case, each stand was simply grown for 5 years and the mortality function in the model was allowed to operate. The default values in the model were used – that is, no growth calibration factors were added to the run. [13]

7

Note that default values were used. No actual growth data were used to calibrate the model. These calculations are highly dependent on the values of parameters used in the model, and these parameters were not based on empirical data from JDSF.

2.4.2 Data Collection Problems and Probable Bias

Even the data collected in JDSF and used in the model is of questionable reliability: "Site information was acquired by choosing site trees [sometimes a single tree per plot] in or near each inventory plot. Using the height and DBH (diameter at breast height) information from these site trees allowed calculation of the site index for each species. This is an important growth model component in CRYPTOS."[14] Thus, the site trees selected were critical to the growth estimates.

8

A letter to JDSF from a consultant on the project lists numerous problems and concerns about the reliability of the data being used as the basis for calculating forest growth, including a concern about the selection and measurements of site trees.[15] The letter makes clear that the site tree selection process was not random but based on subjective judgment. After the data collection on site trees was underway, the consulting firm became concerned:

> As of 7-9-99 HJW provided explicit instructions for all crews to ONLY use the existing site tree if it indeed is a representation of the Site quality for the plot. If the existing Site tree(s) is/are not suitable, a good open grown tree within 300 feet of the plot center shall be selected as the Site Tree, but only if the tree is the best representation of the height and diameter for trees on the plot.[16]

The possibility of significant bias is evident, given the desire of CDF to show high growth rates. If the Site Indices for the plots are biased upward, so will be the calculated growth rates.

2.4.3 DFMP Misleads Further

The results of the computer runs are then presented:

> …the total forest growth per year is calculated by multiplying the 1312 bf/acre value by the 48,652 acres generated from GIS computations. The result of this calculation is 63,851,437 board feet growth per year for all species. Conifers contribute 58,356,176 board feet of this and hardwoods 5,493,880 board feet[17]

9

Obviously, this computer projection is the source of the estimates highlighted in the DFMP. But even beyond implying that these figures were empirical measurements rather than creations of a computer program, the DFMP further misled readers. In citing these results in the DFMP, the forest total is rounded upward to 65 million board feet. The figures are for all-species, not solely for conifers, the class of trees appropriate when

discussing the potential growth available for commercial harvest. Even if CDF wanted to use these calculated estimates, it should have presented those for conifers only – 58.4 million board feet instead of 65 million board feet.

9 In summary, CDF presented a computer projection as a measured estimate, failed to present information on data collection problems and the likelihood of subjective bias, and cited the results of the computer projection in ways that exaggerated the already high estimate of growth.

2.5 Evidence that CDF Does Not Believe IFI System Reliable

Although the IFI system was installed in 1989-90, JDSF has never used the system either to determine the acceptable level of harvest or as a tool in developing timber harvest plans. There is substantial direct and inferential evidence that CDF did not have confidence in the reliability of the system.

2.5.1 Failure To Revise the Allowable Cut

Board of Forestry policies on State Forests says, "Allowable cut levels must be derived from pertinent current inventory and growth data." (Section 0351.4 C.) The Management Plan states specifically, "In 1985 and again in 1990, this allowable cut level will be recalculated based on new inventory and growth information…"[18]

Throughout the 1990's, JDSF set its allowable cut (harvest) at the level determined in the 1983 Management Plan, updated for the results the 1984 (CFI) inventory. But, it never revised the allowable cut after either the 1990 inventory or the 1995 partial remeasurement conducted with the IFI system.

Why did CDF ignore Board policy and its own 1983 Management Plan? Why did it not revise the allowable cut in the early 1990's after the initial IFI results became available?

Starting in 1992, CDF started using about $8 million annually of Jackson State revenues to fund its own internal operations. It was anxious to get as much revenue as possible from Jackson State. The IFI estimate of growth was one-third higher than the prior CFI estimate, thus the revised allowable cut would have been significantly higher, too.

Throughout its history, JDSF has aimed to cut all of the estimated growth. For many years in the 1990's, CDF exceeded the limits set by the CFI allowable cut, despite repeated internal warnings that this would violate JDSF and Board of Forestry policies.[19] In the latter part of the 1990's, CDF even began using the superseded, higher allowable cut of the 1983 Management Plan in its internal discussions of allowable cut, but it still did not propose to revise the cut using the 1990 inventory results.

Given CDF's demonstrated desire to log JDSF at levels higher than allowed by the 1984 inventory, its failure to make the legally mandated revision in allowable cut strongly infers that CDF did not have confidence in the validity of the 1990 or 1995 IFI estimates.

2.5.2 Direct Evidence

Internal JDSF memos support the indirect evidence that CDF lacks confidence in the IFI system.

2.5.2.1 Concerns of John Griffen

John Griffen is a senior forester at JDSF. He began working for JDSF in 1977. He became a supervisor in 1979 and in 1984 became supervisor of the timber sales program, which is by far the most important and largest activity of JDSF. He oversaw the preparation of the 1983 Management Plan, and was in charge of inventory and allowable cut calculations made with the 1984 CFI estimates. In sum, he is experienced and knowledgeable about the condition of the forest and the CFI system.

In internal JDSF memos, Mr. Griffen has several times expressed his personal lack of faith in the reliability of the IFI system and suggested additional analysis. For example, in a 1992 memo, he says:

> So far we can only guess at why the new inventory and growth figures are so much higher than the old.
>
> There is still some question about the reliability of our volume equations… It should be noted that since we have been using the old CFI and setting annual harvest equal to growth, the inventory of the growing stock has remained remarkably constant.
>
> Further analysis would look at basal area and diameter distribution to see if we might just be measuring the same trees with a shorter yardstick…
>
> To answer some of the questions raised above we might want to look further at our volume equations. We still have a lot of data from the 1984 fall-buck-scale study that might be enlightening, and we could compile additional data by doing some intensive woods scaling on each timber sale…[20]

10

Mr. Griffen also performed a calculation to determine his own personal confidence in the IFI.[21] Starting with an initial confidence level of 95%, he considers 10 steps in the history of the system, adjusting his confidence for each development. He ends up with a 65% confidence level. He follows the analysis with:

> Things to do to boost confidence:
> - Precisely locate plots on type map and confirm strata they're in
> - Spend more time regressing diameter-height relationship
> - Analyze check cruise data … develop correction factor for cruises

In a December 1993 memo, Mr. Griffen says:

> …A new calculation of annual cut based solely on growth as indicated by the new inventory has already yielded a figure of something like 42 mmbf. (Of course, this is a based on numbers that I have expressed little faith in.) A lot of work refining the inventory numbers will likely only yield us a somewhat different number that we still won't feel comfortable with. (Emphasis added.)[22]

In the same memo, Mr. Griffen also discusses the problems with keeping the new inventory system current. He pencilled in some updates in Jan 1995, implying that his 1993 concerns had still not been addressed:

> One thing to consider is some kind of remeasurement plan. The plot data is now 4 to 6 years old, and the calculated whole-forest numbers that were brought forward to a common date of 12/31/90 are 4 years old. The original plan allowed for remeasuring one tenth of the plots every year so that no data would be older than ten years, and so the expense could be parceled out into (affordable?) annual amounts instead of trying to

> come up with the whole thing once every 10 years. If we go with the one tenth per year plan, we should have started this year [1993].[23]

He also discusses an important problem that has not been resolved to this day:

> Then there's the question about adequacy of the current inventory system... [The need for more complex forest planning is] an argument for increasing the sophistication of the design. On the other hand, without a forester with enough time to actually manage the inventory, what we have now is too complex to very useful. The stratified sample design, the mixture of permanent and temporary plots, and the provision for partial replacement of permanents at the time of remeasurement are all complications that require time, effort, familiarity and expertise to deal with. We might want to recognize our limited resources and consider actually simplifying the system before we get much into remeasuring things.[24]

2.5.2.2 1995 Inventory "Validation"

Evidently concerns about the 1990 IFI measurements were sufficiently widespread that CDF planned a major project in 1995 to validate or revise its findings. Attached to my comments are 10 pages of typed and handwritten notes concerning this project (Exhibit VT-IN-19). The details are too complex to summarize here, but it is apparent that this was a major project that would require a substantial commitment of resources.

10 An introductory paragraph of "IFI Meeting Notes – 1/24/95" on the validation project is extremely telling:

> The first phase is actually validating (re-doing) the original inventory which was to calculate the forest inventory as of December 1990. Important in this process is the documentation of what and how things were done and what assumptions were made during the process.[25]

Five years later, CDF is planning to completely re-do the 1990 inventory, only this time actually trying to keep track of what was done. Evidently, record keeping during the initial inventory was so inadequate that it was impossible to reconstruct what was done.

2.5.2.3 Was the Validation Study Completed?

CDF has never made public the results of the 1995 validation project. Dharma Cloud Foundation, of which I am a trustee, made a Public Record Act request to CDF in May 2001. Included in the request were:

> All records that relate to estimates of timber inventory and timber growth in JDSF produced since 1985, including all interim estimates that might later have been revised.[26]

No papers on the results of this validation project were found in the files provided by CDF in response to this request.

CDF should be required to provide a detailed description of the results and of problems encountered in conducting the validation study before the EIR is certified.

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[1] To my knowledge, no comprehensive inventory was performed in 1997; thus the numbers listed are probably primarily based on the 1989-90 inventory projected to 1997.

[2] Letter to Marc Jameson, Forest Manager, JDSF, from Vince Taylor, April 22, 1998, Exhibit VT-IN-1, and letter to Richard Wilson, Director, California Department of Forestry, from Vince Taylor, April 22, 1998, Exhibit VT-IN-2.
[3] Letter to Vince Taylor from Richard Wilson, Director, California Department of Forestry, February 11, 1999, Exhibit VT-IN-3.
[4] Attached as Exhibits to my comments and discussed below.
[5] *The New Inventory, What It Tells Us So Far*, typed with hand-written additions, no author, JDSF files, 1993. Gross volume figure for 1984, the appropriate comparison with the DFMP estimate of 1300 board feet per acre per year. Exhibit VT-IN-5.
[6] Estimates and sources for Figures 1 to 4 are in Appendix A of this chapter.
[7] "JDSF Forest Inventory – Transitioning from the Old to the New," Norm Henry, Division Chief, JDSF, in *Jackson Demonstration State Forest Newsletter*, Spring/Summer 1999, Exhibit VT-IN-11.
[8] Letter from J. E. Sindel, State Forest Manager, to George Grogan, Deputy Forest Manager, on Resource Management, Jackson State Forest, Allowable Cut, June 25, 1976. Exhibit VT-IN-13
[9] "JDSF Forest Inventory," *op. cit.*
[10] Memo from John [Griffen] to Forest [Tilley, Manager], April 28, 1992. VT-IN-15, pp.1-2.
[11] DFMP, *op. cit.*, p. 48.
[12] *Ibid.*
[13] *NOTES ON AND RESULTS FROM FOREST GROWTH CALCULATIONS*, no author, from JDSF files, 11/30/00.
[14] *Ibid.* Emphasis added.
[15] Letter from Bonnie Churchill, Hammon, Jensen, Wallen, & Associates, to Norm Henry, JDSF, August 3, 1999. Exhibit VT-IN-7.
[16] *Ibid.*
[17] *Ibid.*
[18] JDSF Management Plan, 1983, p. 73. Interestingly, in light of the discussion of this section, the quoted text continues, "but it would not be expected to change more than 10% at either time."
[19] Vince Taylor, *Jackson State Forest Logging in Excess of Allowable Cuts*, Unpublished paper, July 15, 2002. Exhibit VT-IN-16.
[20] Op. cit., VT-IN-15
[21] *Confidence in the New Inventory*, no author listed but in John Griffen's handwriting, undated. Exhibit VT-IN-17.
[22] Memo to Hal [Slack, Forest Manager] from John [Griffen], *Re: Reorganization*, December 1, 1993. Exhibit VT-IN-18.
[23] *Ibid.*
[24] *Ibid.*
[25] "IFI Meeting Notes – 1/24/95," no author, typewritten. Included in Exhibit VT-IN-19.
[26] Letter to Andrea Tuttle, Director, CDF, from Vince Taylor, Trustee, Dharma Cloud Foundation, May 22, 2001. Exhibit VT-IN-20.

Appendix 2.A: Inventory Systems and Measurements

This Appendix provides information on the JDSF inventory systems and measurements. It provides supporting data and sources for the figures presented in the chapter.

B.6 Inventory Estimates Adjusted for Comparability

All total forest inventory and growth numbers presented here are adjusted to 48,650 acres to make them as comparable as possible. Acreage considered in different estimates made by JDSF range between approximately 44,000 and 49,000. Recent estimates generally are based on an acreage of 48,650 acres; thus the figures cited herein are 2.8% higher than values published by CDF.

To the extent possible or noted otherwise, only conifers (merchantable trees) are included in the estimates.

Numerous differing IFI estimates for the same year were obtained from JDSF files. There is no indication on the estimates of which ones CDF considered most accurate. The one's cited here are representative.

B.7 The CFI Inventory System

From 1959 through 1984, JDSF used the Continuous Forest Inventory (CFI) system to estimate inventories and growth. Estimates were based on periodic measurements made in 141 one-half acre plots. This system yielded estimates that were roughly *self-consistent*, that is, the period to period changes in measured inventories were roughly equal to the starting inventory *plus* estimated growth *minus* harvests.

The last CFI inventory was made in 1984. Total forest inventory was estimated to be 1446 million board feet.[1] Growth (before harvests) was estimated to be 655 board feet per acre per year (gross). For 48,650 acres, the estimated gross growth was 31.9 million board feet.

B.8 The IFI System

The Intensive Forest Inventory system was introduced in 1989. Its estimates are based on a combination of 308 permanent and 2054 temporary one-fifth acre plots. One-hundred forty-one of the permanent plots were placed within the original 141 CFI plots.

Data for the first IFI estimate were collected in 1989-90. Total forest inventory (gross) was initially estimated to be 2,020 million board feet.[2] A later dated publication gives a 1990 IFI total inventory (gross) of 1,892 million board feet.[3] The later publication gives estimated IFI growth (gross, before harvest) of 882 board feet per acre or total forest growth 42.9 million board feet per year.

An internal memo on "1996 Inventory Stats" gives a total forest inventory of 2,296 million board feet and growth of 957 board feet per acre.[4] The memo does not indicate whether these are net or gross or include or exclude non-conifers. Based on other estimates, one would think that these are gross and include hardwoods. However, the memo says, "Based on these figures, the total forest growth based allowable cut would be

46.6 MMBF [million board feet]…." Allowable cuts have been given in past management plans in terms of net volumes of conifers (and further reduced by 4% for breakage), suggesting that the presented estimates were net volumes of conifers.

The DFMP provides what it terms a "1997 IFI Inventory" estimate (gross) of 2,057million board feet.[5] This is virtually identical to the initial 1990 estimate. No corresponding estimate of growth is provided.

Although the CFI plots were remeasured in 1999 and total forest inventory estimates using the new IFI models were made by CDF, these estimates are not presented in the DFMP. An internal JDSF memo presents an estimate of total inventory (gross) of 2,084 million board feet.[6] This internal memo contains the notation "Void;" thus, there were likely changes made in the estimate after this memo was written. This estimate was, however, the only estimate of the 1999 inventory produced in response to a Public Record Act request made on May 22, 2001 for all records related to inventory estimates.

B.9 Compilation of Inventory and Growth Estimates

Table 1 presents a compilation of estimates of forest inventory and growth made under the CFI and IFI systems. The data in this table was used to construct the figures on inventory estimates in the body of the chapter.

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[1] *The New Inventory, What It Tells Us So Far,* op. cit., Exhibit VT-IN-5.
[2] *Inventory Comparison*, draft, no author, JDSF files, 11/1/90. The reported figure was 1,833,650 board feet on 44,151 acres. This has been adjusted to 48,650 acres. Exhibit VT-IN-4
[3] *The New Inventory, op. cit.*
[4] *1996 Inventory Stats,* memo to Marc Jameson from Norm Henry, undated, VT-IN-9. The table is introduced with, "The latest forest inventory /growth figures resulting from the new plot installation and deletion other old plots…."
[5] DFMP, Appendix 5, pp. 156-8. Although the DFMP does not tell how the 1997 inventory was measured, my recollection is that only a subset of plots were measured at that time, and the remainder of the forest was "grown" from 1990 data using a computer model; thus the reliability of this estimate depends heavily upon the accuracy of the growth projections of the computer model. To my knowledge, CDF has never performed any empirical data collection and analysis to calibrate the computer model; thus there is no way of knowing the accuracy of the 1997 estimate relative to the 1990 estimate.
[6] *JDSF Adjusted inventory estimate – CRYPTOS,* handwritten, from Norm [Henry] to Marc [Jameson], 5/1/00, Exhibit VT-IN-8. The figures are for conifers only. The copy of the memo in my possession is copied onto a larger paper and contains the notation "Void". Thus, there were likely changes made in the estimate after this memo was written.

Table 1

Various Estimates of Forest Inventory and Growth, Jackson State Forest										
(Conifers, Gross Volumes)										
Year	1959	1964	1969	1974	1979	1984	1990A	1990B	1996	1997
Inventory System	CFI	CFI	CFI	CFI	CFI	CFI	IFI	IFI	IFI	IFI
Adjusted Total Forest Inventory (1)	1417	1446	1424	1379	1399	1365	2021	1892	2296	2057
Adjusted Total Forest Growth per year (1)	32.1	37.5	34.9	33.1	35.8	31.9		42.9	46.6	
Total Forest Inventory per Acre						28062	41532	38900	47200	42280
Forest Growth per Acre						655.0		882.0	957.0	
Forest Acres in Inventory Measure	50000	50000	50000	50000	50000	48750	44151	48586	48652	48652
Unadjusted Forest Inventory	1456	1486	1464	1417	1438	1368	1834	1890	2296	2057
Unadjusted Total Forest Growth per year	33000	38500	35900	34000	36800	32000				
Harvest Periods		60-64	65-69	70-74	75-79	80-84	85-90			
Years in Period		5	5	5	5	5	6.0			
Estimated Growth in Period (Gross)(2)		160.5	187.3	174.7	165.4	179.0	191.6			
Harvests in period (Gross) (3)		124	189	199	149	133	204			
Calculated Change in Inventory (Growth - Harvests)		36.5	-1.9	-24.0	16.4	46.0	-12.6			
Change in Estimated Inventory (End - Begin Inventory)		29.2	-21.4	-45.7	20.4	-34.0	655.4			
Notes										
Total inventories and growth are in millions of board feet										
Growth per acre is in board feet										

(1) Adjusted to a nominal forest acreage of:	48,650.0									
(2) Harvests are from various JDSF reports										
(3) Various JDSF reports of harvests. Reported harvests are net at mill. Adjusted by author to gross equivalent, based on convers John Griffen, JDSF.										
Sources:										
1959-79, various JDSF Mangement Plans										
1984 - VT-IN-4 and VT-IN-5										
1990A - VT-IN-4										
1990B - VT-IN5										
1996- VT-IN-9; all-species or conifers,										
gross or net, not indicated										
1997 - DFMP, Appendix 5										
1999A - VT-IN-8										
1990B - DFMP, p.48, VT-IN-6 (acreage)										

3 Timber Harvest Policies

3.1 Proposed Timber Harvest Plans Not Best Current Practices

3.1.1 IFI Data Not Used in Preparation of THPs

A major purpose of installing the new IFI inventory system installed in 1989-90 was to obtain geographically fine-structured data to improve timber harvest planning. Meeting current environmental protection standards, as well as managing for maximum sustained production, as required by law and policy, requires use of fine-structured data.

The DFMP provides no indication that the design of the long-term silvicultural plan for the forest or of the proposed near-term timber harvest plans (THPs) relied in any way upon the detailed inventory data of the IFI.

The 5-year schedule of Timber Harvest Plans (THPs) in the DFMP primarily consists of large plans designed to produce 6 to 10 million board feet each.[1] These large plans are within one geographical area and have one silvicultural prescription.

The areas covered by uniform silvicultural prescriptions and harvest methods are so large as to create a presumption that fine-scale inventory data were not used. If fine-scale data were used, the DFMP needs to provide information that allows the reader to understand how they were used to develop the plan. If they were not, the plan did not use best current science and should be rejected.

3.1.2 Timber Management Concerns of John Griffen

In 1992, John Griffen, senior JDSF staff, and supervisor of timber sales at that time, wrote a lengthy memo listing his concerns with current and future forest management in JDSF.[2] Mr. Griffen's memo should be required reading for Director of CDF and every member of the Board of Forestry before they pass judgment on the DFMP and EIR.

Every serious problem Mr. Griffen exposes in his 1992 memo continues to this day, often intensified. The DFMP fails even to acknowledge their existence.

Mr. Griffen expresses concern about

- the unreliability of the new inventory system (previously discussed),
- need for and lack of GIS (Geographic Information System) capability,
- lack of internal support for implementing a sophisticated timber harvest scheduling system (Rich Barber's project),
- the lack of resources to do long-term timber harvest scheduling ("Depending on the level of accuracy and detail required, the task may be virtually impossible or merely overwhelming."),
- needs of the timber sale program ("It's a given that getting the timber sales out will continue to be the number one priority.") will make it impossible for the Operations Officer (John Griffen) to continue involvement with inventory and long term planning.

A number of his concerns are especially pertinent to judging the adequacy of the DFMP. These are discussed in more detail below, with interspersed comments.

2.9.1.1 Griffen: Allowable Cut Determination

The plan has been to use data from our new intensive inventory to come up with a more sophisticated answer to the question of how much to cut than the simple answer of cut equal growth. That was the premise planning premise behind Rich Barber's first harvest scheduling project in 1988.

Comment: Never implemented.

But there are a whole host of options in harvest scheduling, things like even flow, non-declining even flow, area control, volume control, economic optimization, and sequential look aheads.

10 Comment: None of which were considered in development of the DFMP THPs.

Maybe the overriding factor is, or will soon be, the Department's need for revenue, and we should be concerned about providing some target increment for FRIF.

Comment: This was when CDF began funding $8 million of department operations from FRIF, the depository of Jackson State timber sales. The dominance of revenue over all else is widely known and accepted within JDSF and CDF. I was told this myself in 1995 by Ross Johnson, Deputy Director of CDF then and now. The continued importance of JDSF revenue to CDF was emphasized again in an internal memo in 1999.[3]

> Ross [Johnson] has made it clear that if your forest has a target annual harvest or every other year harvest level we all need to make sure that we hit these target sale volumes. ... This is most important for JDSF because of the revenues generated are most critical to the CDF programs. (Emphasis added.)]

2.9.1.2 Griffen: Timber Sales Operations

We've been behind on getting the sales out since at least Fairbank Drive 1986. ...

What it comes down to is that if the sale staff works on nothing but preparing and administering sales then we can probably get out three major sales a year. ... The sacrifice will be in terms of:

training on how to follow the new rules
professional development training
culvert maintenance
plantation maintenance
revisting old sales to learn whatever
small-scale D&E, like looking at regen in Pleiades
road maintenance inspections
stopping to check wood cutters
writing newsletter articles
filling out stand record cards
looking at each other's sales

2.9.1.4 Griffen: Clearcutting versus Uneven-Age Management

In 1987, … it was felt that the predominant management system in the redwood region would be even-aged, and that the State Forest should mirror that trend. As a result, about 75% of the Forest was assigned to even-aged management… Since then it has become apparent that uneven-aged management more closely fits the desires of the Forest's owners and better serves the needs of the demonstration program's primary clientele group. We have now reassigned management systems with the ratio reversed, 75% uneven-aged and 25% even-aged.

(This will have significant impacts both on potential harvest yields and on our ability to efficiently sell it… It is also recognized that it takes more time per mbf to prepare a partial cut than a clearcut.)

Comment: The DFMP heavily emphasizes clearcuts. Including clearcuts, euphemistically called "group selection, the DFMP proposes clearcuts for two-thirds of the forest areas eligible for such harvesting, a total of half the forest. This is contrary to the needs and desires of the Forests owners – the people of California – and the demonstration program's primary clientele group, acknowledged in the DFMP to be small landowners.

10

If CDF were truly concerned about forest ecology, the DFMP would have planned few if any clearcuts. The reversal of course to emphasize even-age management is based not on modern science. Mr. Griffen gives the probable explanation: selective forestry would negatively impact profits and put too great demands on inadequate staff.

2.9.1.5 Griffen: Vision

… Judging from the expressed desire of CDF administration [Sacramento headquarters], the primary purpose of Jackson State Forest is the generation of revenue for FRIF.

… we are operating in the dark, or at least in a thick fog, with no clear direction, purpose or goal… and without any particular interest or support from the Department. This will continue to fuel the frustration and disappointment of the forestry staff who are trying to practice good forestry but who are appreciated only when they practice profitable forestry.

Comment: Amen.

3.1.3 DFMP Failure

Mr. Griffen not only expressed concerns based on deep knowledge, but pointed out many of the steps need to management of JDSF. CDF has taken almost none these, with the result that the basic information and staff capability required to implement a modern, ecologically sensitive management plan do not exist. The DFMP and DEIR fully reflect the absence of knowledge and capability. It is filled with high-sounding rhetoric. But, the timber harvest plans proposed follow the long-standing policy of large timber sales designed to maximize profits, with ecological considerations reduced to the minimum forced by Forest Practice Rules.

3.2 Maximum Sustained Production

3.2.1 The DFMP Fails to Implement Maximum Sustained Production

State law requires that JDSF by managed for "maximum sustained production" of high-quality timber. The policies of the Board of Forestry provide explicit guidance on implementing this requirement of law.

The timber plans of the DFMP are not designed to achieve maximum sustained yield. The DFMP as written is in violation of the law.

3.2.2 Code and Regulations

The Public Resources Code (PRC) pertaining to State Forests says:

> The management of state forests … shall conform to regulations prepared by the director [of the Department of Forestry] and approved by the board [Board of Forestry]. These regulations shall be in conformity with forest management practices designed to achieve maximum sustained production of high-quality forest products while giving consideration to recreation, watershed, wildlife, range and forage, fisheries, and aesthetic enjoyment. [PRC §4651] (Emphasis added.)

The Board of Forestry regulation on maximum sustained production says:

12

> E. State forest timber stands should be harvested on the basis of maximizing mean annual increment of high quality forest products. This should not preclude intermediate cuts designed to increase total yield and reduce losses from mortality.

3.2.3 Maximizing Mean Annual Increment

"Maximizing mean annual increment" is a basic mathematical method for determining the point in time when one should cut a stand of trees in order to achieve the maximum sustained production. It is a well-established concept in forestry.

The "annual increment" is the volume of growth in a given stand in a year. The "mean annual increment" (MAI) is the average of the annual increments since the stand began growing. The average will continue to increase as the stand grows older and bigger. While the mean or average is increasing, the annual increment will lie above the average. At the point where the growth slows to the point where the annual increment falls to the average, the "maximum mean annual increment" (MMAI) will have been reached. If the stand is grown for either a shorter or longer time, its average production will be below this maximum.

In establishing the regulation that state forests maximize mean annual increment, the Board of Forestry faithfully implemented the intent of the PRC section on maximum sustained production. It provides an unambiguous, well understood technical directive.

The age of maximum mean annual increment depends upon the growth characteristics of trees in the stand and the growing conditions. The longer before growth volume starts to decline, the greater will be the age of at which a tree will reach its maximum mean annual increment.

Forest researchers have constructed tables of MMAI. There are different tables for different species, with different values for different growing conditions (site values) for each species.

3.2.4 MMAI and Jackson State Forest Management

The 1983 Management plan discussed the Board Policy on managing for maximum mean annual increment, but as a "suggested" rather than a mandated policy:[4]

> Board of Forestry policy suggests [sic] that State Forest timber be managed to optimize mean annual increment of high quality forest products.

The reason for this misstatement becomes clear in the next sentence:

> Unfortunately, currently available yield tables (Lindquist and Palley, 1963) and growth models (CRYPTOS, (c) Wensel 1982 (Krumland and Wensel 1982)) indicate that board feet mean annual increment of good to high site redwood/Douglas-fir stands does not culminate, at least within a reasonable rotation (175 years). Part of the problem is a lack of data on stand growth past about age 100.

12

Therefore, if Jackson State were to follow the directive of the Board of Forestry, it would not be harvesting any second growth for many decades. The 1984 Management Plan, therefore, dismissed the "suggested policy" as "unrealistic," and did not further consider maximum sustained yield.

3.2.5 The DFMP and Maximum Sustained Yield.

The DFMP discusses cumulative mean annual increment (CMAI), which is another term for MMAI, in the context of setting rotation ages for harvest. It states:[5]

> Two rotation ages (a term only applicable to even-aged management) based on average site classes: short to medium and medium to long rotations. The western portion of the State Forest generally averages Site II. Short to medium rotation ages on the West End are considered to be 60 to 90 years. Medium to long rotation ages are characterized as 90 to 120 years.

For the eastern portion, it specifies longer rotation ages, but most of the east end is still young and is far from any reasonable "rotation age." It is the west end where most of the revenue-producing harvest plans are scheduled, and thus where the policy adopted will have a significant effect on harvest planning.

Note that the policy appears to apply only to clearcuts (or other pseudonyms), because "rotation age" applies only to clearcuts. The DFMP needs to clarify whether or not it applies to selection harvests.

The policy of the DFMP with respect to MMAI (CMAI) is clearly stated:[6]

> The intent was to find a range of ages that might bracket the age of culmination of mean annual increment (CMAI) <u>within the medium to long rotation alternative</u>. (Emphasis added.)

The DFMP thereby acknowledges that all harvest plans with harvest ages in the short to medium bracket will be in violation of the directive to manage for CMAI.

Further, the DFMP does not provide the data or analysis used to determine the lower end of the CMAI rotation age. A reasonable lower estimate of CMAI for most stands in JDSF may well be much higher than 90 years.

The most recent data on which the DFMP says the projections were made for redwood CMAI is almost 40 years old and only went to 100 years.[7] This is a critical shortcoming, because there is even now little data on second-growth redwoods more than 100 years of age, and there was even less forty years ago. Data past 100 years of age is essential, because the mean annual increment for redwoods on most site classes culminates beyond 100 years.

Given the legal requirement that JDSF be managed for CMAI, a thorough search for data on CMAI in coastal redwood forests should have been conducted and included in the DFMP. If adequate data were not found, the DFMP should have made development of this data a prerequisite for planning specific large THPs. Without this data, timber harvesting cannot conform to state law and Board policy. Development of improved CMAI data would contribute to the research and development mission of Jackson State.

3.2.6 The DFMP, CMAI, and Short-Term Harvest Plans

13 The DFMP does not specify CMAI as one of its objectives or even one of its considerations in developing its short-term harvest plans.[8] It does not specify how each of the harvest plans contribute to the achievement of MMAI, which is an implicit requirement of the Board policy on MMAI. Therefore, the DFMP violates Board policy and state law.

3.3 Allowable Cut

3.3.1 Allowable Cut Key Component of DFMP

The allowable cut has been historically the most single important component of management plans for Jackson State Forest. It has been used to determine the level of harvests, and timber harvesting has been the dominant activity in Jackson State Forest. Although the DFMP purports to give greater weight in the past to other activities, the contents of the DFMP are heavily oriented toward continuation of large-scale timber 14 harvesting.

The allowable cut constitutes the target for timber sales volumes. It has also acted as a strong constraint on CDF Sacramento, which, as documented herein, values JDSF primarily for the revenue that it can provide for state forestry programs. The allowable cut needs to be clearly defined and set at a level that will not allow forest values to be degraded by timber activities. The DFMP fails to meet this objective and is therefore fatally deficient.

3.3.2 Allowable Cut Must Be Based On Current Inventory Data

Board of Forestry Policy specifies that "Allowable cut levels must be derived from pertinent current inventory and growth data." Implicit in this requirement is that there be reliable, accurate data in which decisionmakers can have confidence.

The DFMP does not derive its allowable cut from "current inventory and growth data." As documented in Section 3 of my comments, this would be impossible, because JDSF does not now have accurate estimates of inventory and growth. The figures cited in the DFMP have been demonstrated to be based on models and data that have not been empirically validated and that are not trusted even by JDSF staff.

15 Significantly the DFMP does not base its determination of allowable cut on the estimate of growth that it cites as "the most reliable evidence." Rather, it uses computer modeling of growth performed for an Option A document, which has never been approved. The computer modeling uses 1989-90 inventory data, which in no way can be considered current, given the high level of harvesting that was done during the 1990's.

The numbers in the Option A document on which the DFMP is relying for determination of allowable cut are **projections**, not current inventory data as required. The projections depend upon many parameters that have not been empirically validated by data from JDSF and are highly suspect, because they yield estimates that far exceed the consistent estimates produced by the CFI system for 25 years.

The DFMP admits that the Option A projections do not accurately reflect the constraints on harvesting near streams accepted in the DFMP and that there are numerous other uncertainties around harvest constraints that may affect the harvest. The DFMP does not make any effort to quantify these, but simply asserts without foundation that these may "affect harvest levels by as much as 15 to 20 percent in one direction or the other." This is an unsubstantiated assertion. The estimate is made suspect on its face by the phrase "in one direction or other," because none of the listed effects would increase the potential harvest level." Given the importance of the allowable cut figure, supporting data and analysis in meaningful detail are imperative.

3.3.3 Meaningful Detail of the Allowable Cut Calculation Not Provided

16 The DFMP lists 23 Special Concern Areas in which harvesting will be restricted. The allowable cut determination should specifically address the reduction in harvest potential associated with each of these areas. A methodology for doing this was developed by Ross Johnson, present Deputy Director of CDF, when he was on the staff of JDSF.[9] This was applied by John Griffen to adjust acreage for determination of the allowable cut used in the 1983 Management Plan.[10] Thus, the methodology is known within JDSF and has been applied in the past, but was not applied in the DFMP.

The DFMP or DEIR needs to provide data on the adjustment factor used for each Special Concern Area in order that the public and decisionmakers can judge for themselves the appropriateness and correctness of each adjustment factor.

3.3.4 DFMP Allowable Cut Likely a Substantial Overestimate

17 I have attempted to make an approximate estimate of an allowable cut based on cutting all allowable incremental growth. This illustrative calculation shows that the allowable cut of the DFMP is very probably substantially greater than true incremental growth that can be harvested within the constraints of law and the DFMP.

17 Taking into account the restrictions on harvest in Special Concern Areas reduces equivalent acreage to 61% of the unrestricted acreage.[11] The latest estimate of forest acreage, based on GIS data is 48,652 acres, or an equivalent unrestricted acreage of 29,689 acres. Applying the 1984 CFI estimate of net growth of 607 board feet per acre (the last reliable estimate of growth available) to the adjusted acreage yields an allowable cut of 18 million board feet.

The illustrative estimate of allowable cut is only 58 percent of the DFMP allowable cut. The need for more data and analysis in determination of the allowable cut is apparent.

3.3.5 Allowable Cut Should Not Be Based on Incremental Growth

Board of Forestry Policy requires the Forest to be managed for MMAI. Intermediate cuts must contribute to increasing maximum sustainable yield. To fulfill this mandate, the allowable cut must be derived by determining the specific harvests that will contribute to increasing the ultimate MMAI. An allowable cut based on MMAI will be significantly less that incremental growth when, as is the present case, the age of trees in the forest are significantly below the age when MMAI occurs.

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[1] DFMP, p. 56. Three out of the five years have only 4 plans each, and the other two have three large plans and a number of small ones. The allowable cut of the DFMP is 31 million board feet; thus the large plans average close to 8 million board feet each.
[2] VT-IN-15, op. cit.
[3] Email from Jon Rea, CDF Sacramento, to all State Forests and Marc Jameson, Subject: "Sale Volumes, Revenues, Even Flow," February 11, 1999.
[4] 1983 JDSF Management Plan, P. 55.
[5] DFMP, p. 54.
[6] *Ibid.*
[7] *Empirical Yield Tables for Young-Growth Redwood* by Lindquist and Palley (1963), and *Stand and Volume Tables for Douglas Fir in California* by Schumacher (1930).
[8] DFMP, pp. 55-56
[9] *Update of Management Acres on Jackson State Forest,* Ross Johnson, JDSF, 1/23/78.
[10] *Considerations for Determination of Allowable Annual Cut,* John Griffen, JDSF, 10/23/79.
[11] Vince Taylor, VT-IN-24.

4 Other Comments

4.1 Public Comment and Scoping Sessions

18 The DFEIR does not include the oral comments presented at its scoping sessions for the DFEIR. The Campaign to Restore Jackson State Redwood Forest made extensive comments that are not included in the section purporting to include public comments, DFEIR Volume 2, Appendix 6.

The cutoff date for publishing comments received on the initial DFMP was more than six months before the publication of the DFEIR. This early, arbitrary cutoff date eliminated many comments from being published that should have and could have been included in the public record.

4.2 Forest Condition Not Improved

4.2.1 Increasing inventories

The DFMP needs to correct the statement on p.1, chapter 1and wherever similar other statements appear:

19

> Due to the long-standing practice of harvesting less than growth, inventories of standing timber continue to increase.

The correct statement would be: "Due to the long-standing policy of cutting all estimated growth, we believe inventories have been maintained approximately constant, but there is substantial uncertainty about current inventories. Due to our long-standing policy of cutting the oldest trees, almost all old growth and much of the oldest second growth has been cut."

4.2.2 Improving Resource Conditions

The DEIR says in Section VII-1.5,

20

> Where natural resources are concerned, it is important to recognize that the general goal of the JDSF Management Plan is to achieve net improvements of conditions for all natural resources over time in comparison to existing conditions. *This goal has been ongoing since the property was acquired by the State in the 1940s and 1950s. The site was acquired in a degraded condition, but over time, has notably improved in most of the resource categories.* (Emphasis added.)

The emphasized quotations are erroneous and need to be corrected. CDF has made similar, unsubstantiated statements so many times in press releases that its leadership may believe them. There is no place for such erroneous statements in the DEIR and DFMP. The public record needs to be set straight.

First, it has never been up to this time a goal "to achieve net improvements in conditions for all natural resources over time." This goal was not stated in previous management plans and is contradicted by discussion in previous plans regarding wildlife ("Not much can be done in the wildlife management field until better population figures are available.

There are no known plans for any agency to conduct such studies." 1983 JDSF Management Plan).

Second, abundant evidence contradicts the assertion that natural resources have notably improved:

a. The old-growth components of the forest have been seriously degraded (essentially annihilated) under state management.

b. The miles of road, which are the admitted major cause of stream degradation, have increased substantially.

21 c. Caspar Creek and Hare Creek were largely recovered from the initial logging when inherited (with inventories in excess of 80,000 bf/acre in the 1970s). These are important native coho watersheds that were well on the way to becoming undisturbed late-seral forest. Both have been heavily logged, with the North Fork of Caspar Creek having over 500 acres clearcut within the last fifteen years.

d. The stocking levels at all sizes of trees steadily decreased from 1964 through the 1984 (the last available reported stocking data by tree size).

e. The best available evidence (CFI inventory reports) is that inventory has been decreasing slowly since the 1960s, while the condition of important watersheds (Chamberlain Creek, South Fork Noyo, Caspar Creek, Hare Creek, and the North Fork of Big River) have all been degraded under state management.

4.3 Resource Specific Analysis – DEIR, Section VII.

Section VII-1.6 (pp. 78-9) says:

> Impact assessment and mitigation are stated in general terms where the specific details of a particular activity are not known, and cannot be known at this time. This is particularly true for a Program EIR such as this that must forecast the impacts of actions resulting from policy decisions. Most often, programmatic or policy-level mitigation is provided as part of the EIR. Detailed mitigation may be deferred to a subsequent impact assessment. In these cases, additional CEQA review is required once the activity is fully defined in terms of scope, location, and other factors.

22 The conclusion of this section is wrong, because its assumption is wrong. It is not true that the Management Plan needs to "forecast impacts from policy decisions" and, therefore, details of a particular activity cannot be known at this time, justifying deferral of detailed analysis and mitigation measures.

BOF policies include the requirements: "B. A rotation age, cutting cycle, and an allowable annual cut will be established for [Jackson State]. Timber harvesting schedules should be projected at least five years into the future. C. Allowable cut levels must be derived from pertinent current inventory and growth data." (BOF Policies, section 0351.4)

These specific requirements have been met in every management plan previous to the current one and are largely met in the current one. The DFMP contains a table showing harvest plans and harvest methods and a map showing the location of these plans. Therefore, the harvesting plans are specifically known for the next five years, and the

silvicultural methods to be used in every area of the forest are specified, together with rotation ages and cutting cycles. Indeed, a number of the harvest plans have already been marked for cutting. Thus, the specific details of activities for the next five years *can be known now*, and the longer-term context in which the next five years of activity will be carried out is also specified now. **Thus, CDF can and should consider in detail the impacts of its five-year timber harvesting plans, individually and cumulatively, in all of the CEQA-required areas.**

4.3.1 Aesthetic Resources

Section VII-2.3.1 says: "Future management of timber harvest within the DFMP places a priority upon aesthetics near homes, recreational facilities, and main travel corridors."

23 The contents of the DFMP do not conform to this statement.

4.3.1.1 Recreation

There is no recreation plan (RECP) contained within the DFMP. The lack of RECP is contrary to one of the goals (Goal 5) which the DFMP is designed to achieve (DFMP, p. 5):

> 5. Plan for and provide low impact recreational opportunities that are compatible with forest management objectives and healthy ecological processes, and that are consistent with historic recreational use characteristics.

The lack of a RECP causes the DEIR section on aesthetics and recreation to be vague and non-specific(Section 2.3.2, p.87):

> The DFMP generally defers the explicit definition of the Recreation Corridors until a user-survey is conducted as part of the JDSF recreation management program... However, the DFMP does propose a defined corridor width of 300 feet around major campgrounds and identifies that this zone will preclude even-aged silviculture, but does not specify any other particular management prescription for that zone."

24 The lack of specific plan and resulting vagueness precludes informed comment on the adequacy of the DFMP in protecting aesthetic resources important to recreation uses of the forest. CDF should be required to prepare a specific recreation plan with specific, detailed aesthetic protection measures prior to certification of the EIR.

4.3.1.2 Neighbors

The DEIR says only that CDF has historically "discussed" harvest operations within 200 feet of neighbors. A mitigation that might apply to neighbors is discussed on page 91 of the DEIR, but it is unclear whether or not it does apply. In any event, the mitigation does not guarantee any influence by the affected neighbors nor specify the minimum width of the buffer, which needs to be greater than 200 feet to provide any degree of real protection.. As stated, it would allow "single-tree selection" without any limit on the percentage of trees that could be removed and says nothing about the treatment of slash, preservation of existing recreation trails, or treatment of logging roads.

No mention is made in the EIR of recreation values of forest adjacent to neighborhoods. Therefore, there is no consideration of the tradeoff between recreation values and timber values. There is no consideration of restrictions on harvest to protect existing or potential recreation values. The lack of meaningful detail in discussing recreation in neighborhood forests precludes informed decisionmaking and public participation.

25 With respect to the DEIR treatment of harvest operations adjoining forest neighbors, informed decisionmaking and public participation are impossible because there is no clear description of proposed administrative procedures for consulting with neighbors, quantitative minimums or ranges for buffer size, types of allowable harvest operations and allowable percentages of single-tree tree removal within buffer zones, or provisions for protecting recreation values.

4.3.1.3 The Mendocino Woodlands Camp and Surrounding Forest

The DFMP has two planned timber harvests adjacent to the Woodlands Camp. These plans are in the so-called 2,550-acre "Special Treatment Area" that surrounds the Camp and is managed by CDF.

Background: The Mendocino Woodlands Area

The Mendocino Woodlands Camp is leased from California State Parks. The Camp is part of the Mendocino Woodlands Recreational Demonstration Area (Woodlands Area), an area of 5,426 acres transferred by the federal government to the state of California in 1947.

Originally, the Woodlands Camp comprised the entire 5,426 acres. The Woodlands Area now consists of three parts: the Woodlands Camp (780 Acres), a Special Treatment Area or STA in Jackson State Forest (2,550 acres), and the remaining part of the transfer, which is managed as a regular part of Jackson State Forest (2,155 acres).

All parts of the Woodlands area are of great ecological importance. With two exceptions, no logging has occurred in this area in eighty years, making it one of the two large areas of undisturbed, mature second growth in Jackson State Forest. These areas of mature second growth have great potential for providing habitat to endangered species, especially the Marbled Murrelet, dependent on old-growth type habitat.

The Woodlands Area was transferred to the state of California explicitly for park, recreation, and conservation purposes. The act of Congress authorizing the transfer stated in part: "Every such deed or lease shall contain the express condition that the grantee or lessee shall use the property exclusively for public park, recreational, and conservation purposes. ..." {Act of Congress of June 6, 1942[56 Stats. 326; 16 U.S.C. 459t].} The state expressly agreed to these terms in accepting the transfer. Under any reasonable interpretation of the purposes for which the Woodlands Area must be used, timber operations that do not directly contribute to recreation and conservation are prohibited.

Harvest Plans

The Draft Management Plan specifies two timber harvests within the next five years in the Special Treatment Area of the Woodlands. Both of these timber plans will detract

from the recreational values of the Mendocino Woodlands Camp, which is located within the Woodlands Area.

Railroad Gulch: The largest plan is 270 acres in Railroad Gulch, which borders on the west side of Woodlands Camp and spans one of the recreation trails most used by Woodlands Camp visitors, the Forest History Trail. (See Woodlands Logging Map). To allow logging in this protected area, the state in 1981 designated the 270 acres a Demonstration and Research Project of the University of California. It was logged initially in 1984 under this justification. The planned logging is also being justified as a continuation of this "research project." You may wish to point out that such a use is directly contrary to the clear legislative purposes of the entire Woodlands area.

26 Even the research justification for the new plan is questionable. The original research design called for a second harvest in 1990, 12 years ago. This harvest was never done, thus the original hypotheses can no longer be tested.

CDF has entered into a Memorandum of Understanding with State Parks that allows it to conduct logging operations within Railroad Gulch right up to the edge of Woodlands Camp (DEIR, p. 85). This is the sole exception to a 200-foot harvest-exclusion buffer from all camp areas administered by State Parks. You may wish to object to the lack of any exclusion buffer between the Woodlands Camp and the planned Railroad Gulch Harvest.

Thompson Gulch: The second harvest plan is in the north end of the Special Treatment Area. (See Woodlands Logging Map.) An old road that is often used for hiking crosses it.

The stated purpose of the harvest plan is to accelerate the development of "late-seral characteristics," which describe the forest structures found in old-growth forests.

27 There are no specifics given for the Thompson Gulch plan, precluding making an informed judgments about the environmental effects of the plan. Because this plan is stated to be a demonstration and model for future timber operations throughout the Special Treatment Area, and because of the great ecological value of the Special Treatment Area, detailed specifications for the plan need to be a part of the EIR.

28 With respect to the EIR treatment of harvest operations in the Woodlands Special Treatment area, informed decisionmaking and public participation are impossible because the plans are not described in meaningful detail and there is no consideration given to the recreational and wildlife benefits of undisturbed forest. Moreover, the original deed transfer of this land precludes any timber operations that don't contribute to recreation, park, or conservation use. The Railroad Gulch plan clearly violates this clause.

4.3.1.4 Impacts

Section VII-2.5 lists two aesthetic impacts and mitigations

Impact 1: *Even-aged timber harvest would have a substantial adverse effect on scenic vista.* (Less than Significant with Incorporation Mitigation)

C&Q: The proposed mitigation is to have an RPF evaluate the visibility of even-age harvest plans and "Where appropriate to visually soften and mitigate impacts .. on the integrity of views visible to the general forest visitor…" through a possible combination

29 of modifications to the THP. (DEIR p. 90.) No quantitative standards are specified for the possible mitigations, precluding informed decisionmaking and public participation.

Impact 2: *Timber harvests and related activities would substantially degrade the existing visual character or quality of the site and its surroundings.* (Less than Significant with Incorporation of Mitigation)

The DFMP prescribes restricted harvesting operations with 23 identified "Special Concern Areas," including Forest Boundary neighbors, but specifies buffer size and allowable operations only for a few of these. The DEIR proposes a **mitigation** similar to that for Impact 1 for "all timber harvest plans conducted within or adjacent to Special Treatment Areas or buffer areas that are identified but not specifically defined in the DFMP…" (DEIR, p. 91) The specific modifications made to a THP is to be determined by a "qualified professional as determined by CDF." No size or range of size or minimum size the buffers are specified in the mitigation. Harvest practices within the mitigation buffers are specified to be a one or a combination of single-tree selection, hazard tree removal, or no harvesting as appropriate. Single-tree selection can occur in a wide range of percentage tree removal. The absence of quantitative minimums and ranges for buffer
30 size and allowable percentages of tree removal for each type of Special Concern Area preclude informed decisionmaking and public participation.

4.4 Recreation

The DFMP fails to accord recreation consideration equal to other specified secondary values of state forests. This is arbitrary and denies the public one of its most desired products of the forest.

Section 4651 of the PRC says that the forest will be managed for production of forest products "while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, and aesthetic enjoyment." Note that recreation is listed as the first of the secondary values of the forest. Yet, the DFMP (p.3) says:

> This plan builds on the 1983 plan by elevating wildlife, watersheds, and ecosystem process to a level of importance equivalent to the timber management and the research, demonstration and education programs.

Recreation is notably absent from the list of elevated values, despite being the first of the legally mandated secondary values.

The DFMP does not contain a recreation plan, nor does it contain adequate current data on recreation use (only the number of camper days) or public desires. The absence of a
31 plan and data make impossible informed decisionmaking and public participation about future recreation uses in JDSF.

4.5 Economics

The DFMP fail to provide a meaningful economic analysis. The estimates of Economic Impacts (DFMP, p. 26) make the elementary error of assuming that people employed
32 processing timber from Jackson State Forest would not find employment elsewhere. Employment opportunities continue to grow in Mendocino County, and any unemployment tends to be short term. Furthermore, a detailed analysis of the

employment contribution of Jackson State Forest shows that about ½ of timber production reduction in Jackson State would be replaced by Mendocino mills from other sources; thus timber employment effects would be much smaller.[1]

33 Further, the DEIR does not consider at all the economic effects of making Jackson State into an old-growth forest with expanded recreation and wildlife habitat. The economic gains from Mendocino County from such a use of Jackson State may well dwarf the economic benefits from the preferred alternative. The lack of economic analysis of the alternatives in the DEIR precludes informed decisionmaking and public participation.

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[1] Vince Taylor, "Economic Effects of Restoring Jackson State Redwood Forest: Dispelling the Myths, in *Conference on the Restoration of Coast Redwood Forests: Jackson Demonstration State Forest,* published by Dharma Cloud Foundation, November 4, 5, 2000. VT-IN-25.

Letter VT-241 (Campaign to Restore Jackson State Redwood Forest)

Response to Comment 241.1
The forest inventory, timber growth, and allowable cut information presented in the DFMP was subjected to an independent review as part of the DEIR process. The review indicated that JDSF personnel used "modern, best available techniques to ensure the growth and yield estimates utilized in the planning process were as comprehensive and accurate as possible" (refer to Appendix 8A – Page 15). The timber inventory and growth techniques used by JDSF staff are fully disclosed in the Appendix. The information is provided in the appendix rather that the body of the DEIR due to the technical nature of the material (CEQA guidelines section 15147).

Many of the comments included in the letter are aimed at management practices proposed in the DFMP or past actions of CDF. A reference to general response 1 is appropriate in many cases, however a more direct and detailed set of responses has been provided. Furthermore, Article 10 of the CEQA guidelines addresses many of the concerns included in the comment letter. Section 15146 states that the degree of specificity required in an EIR will correspond to the degree of specificity of the activity described in the EIR. A program EIR need not be as detailed as an EIR on a specific project that may follow. The level of analysis in an EIR is subject to the rule of reason. The information presented and the analysis needs to be specific enough to permit informed decision making and public participation. However, the need for thorough discussion and analysis is not to be construed to serve as an easy way for project opponents to defeat projects. Section 15147 states that information contained in an EIR shall include summarized technical data, and detailed technical data should be placed in an appendix. Section 15148 states that scientific documents relating to environmental features should be cited, but not included in the EIR.

Considering these guidelines, the amount of information and level of detail provided in regards to forest inventory, timber growth and allowable cut information presented in the body of the EIR, Appendix 8 and as cited is entirely appropriate for a program EIR.

Response to Comment 241.2
The inventory data in the DFMP and DEIR presents a detailed and accurate picture of the resource situation on the Forest, and is more than adequate for informed decision-making and public participation. The inventory results provided in Appendix 8 of the DEIR are aggregated by geographic area (east end and west end of the forest), vegetation and site classes. The inventory was designed for this scope of analysis and reporting and is consistent with standards of practice in the profession. This level of detail exceeds that contained in past management plans. All the inventory data for JDSF is publicly available in electronic form, and was made available to the commenter. The commenter is free to engage in any data analysis he sees fit.

Past management plans for JDSF and the inventory information therein exhibit a clear pattern of change over time as the management situation changed. Research and demonstration on JDSF is now shifting away from a primary emphasis on timber commodities to also include issues such as sustainable forestry, public trust resource protection and non-timber commodities. Many of the detailed timber resource reports of past plans have been replaced with other analyses more relevant to the challenges of forestry in the twenty-first century. The current JDSF management plan continues the tradition of adapting to changes in societal priorities and forest research needs.

Response to Comment 241.3
The inventory and growth data presented in the management plan and reviewed in the DEIR are accurate and unbiased. The data is presented in a logical, organized fashion that enables the reader to evaluate the proposed management plan. JDSF inventories were developed according to accepted scientific and professional standards by licensed professional foresters. CDF believes the inventories supporting this management plan to be correct and unbiased, and constitute the best available evidence of inventory and growth information on JDSF.

The February 11, 1999 letter from then-Director Wilson to Vince Taylor answered the earlier questions raised and demonstrated that the concerns were groundless. Consequently, there is no reason for CDF to engage in further analyses.

The complete inventory data for JDSF was made available to the submitter on July 13, 2001. CDF believes that the data speak for themselves, and that an examination of the actual data will confirm CDF's analysis and results.

Response to Comment 241.4
This comment, and other related comments questioning the validity of the presented inventory and growth information, presents no analysis of the actual inventory data. Rather, the submitter presents only speculation about purported inconsistencies in CDF's published inventory reports spanning four decades, selectively quoting summary statistics out of context and incorrectly interpreting results. This speculative line of theorizing about likely problems with JDSF's inventories are groundless. They are also wholly irrelevant because the inventory data are hard facts, not subjective opinion. The actual inventory data can easily be examined to indisputably verify or refute CDF's inventory estimates. All JDSF inventory data were made available to the submitter on July 13, 2001. CDF believes that the data speak for themselves, and that an examination of the actual data will confirm CDF's analysis and results.

Response to Comment 241.5
The management plan was not based on the IFI alone, both the IFI and the CFI served as a basis for the plan.

The discussion of discrepancies in growth estimates mixes apples and oranges by comparing different definitions of growth. The forestry literature identifies at least four different definitions of stand growth, incorporating different combinations of mortality, ingrowth, and harvest. A rigorous explanation of the different components of growth can be found in most forestry textbooks.

The most recent 1999 CFI remeasurement supports the IFI inventory results. The IFI and CFI are independent sampling efforts, with different objectives and sampling designs. They are not directly comparable. Both inventories must also be tempered with an understanding of the nature of statistical estimates. For these reasons it would be unreasonable to expect them to give the exact same results.

The underlying premise that a lack of close correspondence in estimates between previous generations of CFI data and recent IFI data in and of itself is indicative of an error in the IFI, CFI or both, is intrinsically invalid. It is unreasonable to demand perpetual consistency between inventories over time, especially over a time span of four decades. Forest inventories are moving targets because forests are dynamic living systems that continually alter their growth relationships with time. Inventories are used as adaptive management tools that enable the scientific and professional community to acquire new knowledge over time. This in turn may warrant taking a fresh look at old assumptions and revisiting the analysis of old data.

It is relatively easy to find inconsistencies in any time series of data that spans 40 years of measurements, if one sets out to do so. Such an approach however, fundamentally misses the point. Rather than a liability, CDF believes such inconsistencies constitute a compelling testimony to the CFI's proven value as an adaptive management tool. The JDSF CFI data is an unequalled repository of historical resource information in the redwood region. The CFI system is still in use for both research and management, which is a testament to its quality and value as a feedback mechanism.

Response to Comment 241.6
Initial CFI inventories incorporated the premise of harvesting exactly equal to growth, thereby maintaining the initial age structure of the Forest and obviating the need for measuring heights at every remeasurement. The fact that past CFI reports did not update the height-diameter relationship to account for a maturing age structure over time does not indicate that historic nor current results are wrong. It simply reflects a gradual discovery of the fact that the Forest was not cutting as much as it was growing thereby creating an older forest and gradually requiring an update of the height-diameter relationship.

The commenter selectively quotes one of several factors of the cause of changes in diameter-height relationships in a forest over time, and incorrectly labels it as CDF's explanation. The February 11, 1999 letter from then-Director Wilson to Vince Taylor resolved the issues raised here.

The comment includes a CDF document that explains the differences between the CFI and IFI inventory results (comment attachment VT-IN-11). The comment provides figures 1 and 2 of the CDF document as comment Figures 2-7 and 2-8, and refers to them as showing volume as a function of diameter. This is not correct. The figures show the relationship of tree diameter to height. While the comment may be correct in stating there is about a 7% difference in the segment of the curves for redwood trees from 12 to 30 inches DBH, this is a difference in height, not volume. When this difference in height is converted to difference in volume, the difference is 14% as demonstrated in the CDF document provided with the comment. The CDF document also demonstrates how this 14% difference accounts for the majority of the difference in the CFI and IFI inventory results, given the statistical accuracy of the two inventories. The difference in diameter-height relationships is based on measured differences, not theoretical as indicated in the comment.

Response to Comment 241.7
A review of the CRYPTOS methodology used to estimate growth on JDSF is provided in the JDSF Option A document. Appendix 8A of the DEIR includes an independent review of the growth estimate on JDSF. The review indicated that although there are some concerns with the way CRYPTOS responds when trees are added to the understory of a modeled timber stand, JDSF was aware of this, made adjustments, and used the model appropriately. The modeled growth estimates were judged to be reasonable considering:

- modeled growth was more conservative than the measured growth
- future inventories would be used to monitor modeled growth against the measured growth, and
- adaptive management would allow JDSF to periodically adjust estimated growth levels.

Response to Comment 241.8
JDSF data collection procedures for the IFI and CFI, including the site index sampling protocol, is statistically unbiased and follows accepted sampling practices in professional forestry. This comment appears to arise from a lack of knowledge of the definition of site index in forestry and appropriate sampling procedures. Most forestry textbooks provide a thorough discussion of this subject.

JDSF data collection procedures for the IFI and CFI follow standard and practice in the industry. They are objective and unbiased.

The documents cited to support this comment, and other comments, question the validity of the data because field data collection procedures were clarified while in progress. To the contrary, this citation indicates that appropriate data collection quality control and quality assurance practices were in place. Check cruising field data and providing the results of the check cruise to the field crews is the standard practice. If problems are found or suspected, procedures are changed or other action is taken to address the problem. This is the process documented in the citation.

Response to Comment 241.9
This comment is incorrect. The 65 MMBF growth figure used in the DFMP and the DEIR is based on remeasurements of 141 CFI plots completed in 1999.

This comment appears to be based on an internal CDF memo describing a computer growth simulation based on remeasurements of 141 CFI plots completed in 1999. The memo in question simply describes an independent growth model projection done to compare with the estimated growth. It is standard practice in the industry to conduct independent simulations using several methods to compare with and validate an inventory or growth estimate.

Confusion may stem from the fact that the 1999 CFI remeasurement data was used in both the CRYPTOS run referenced in the comment and the calculation of the 65 MMBF growth figure used in the DFMP. It is interesting to note that the modeled future growth is fairly close to the measured past growth. The CRYPTOS run cited in the comment was completed by JDSF staff for in house use, not to support growth estimations for the Option A document, the DFMP or the DEIR. The allowable cut figure used in the DFMP is based on the JDSF Option A document. A separate set of CRYPTOS model runs were used in the Option A document. DFMP page 47 references the measured 65 MMBF forest growth and the Option A allowable cut of 39 MMBF.

All of the growth and allowable cut estimates are based on the standard of practice within the forestry profession and, while not directly comparable due to the different methodologies used and different objectives, they can be used in combination to develop a better understanding of forest growth on JDSF. As discussed in the Appendix 8A, measured growth provides insight on how the forest has grown in response to past management. Modeled growth provides insight on how the forest will likely respond to proposed management practices. Allowable cut estimations take into the various constraints that limit harvesting.

Response to Comment 241.10
CDF staff continually engages in vigorous debate about JDSF management. Sometimes they will exaggerate their discussion to get a point across, or play devil's advocate to explore the consequences of different viewpoints. CDF attempts to cultivate this kind of open discussion between our staff, and in fact view this as a strength rather than a weakness.

The material quoted represents one of many different viewpoints held by CDF Foresters on a variety of issues. Many of these communications constitute preliminary work products completed several years ago and appropriately should be interpreted in context of the eventual resolution of the issues that were discussed. None of this material present evidence to indicate the current management plan or DEIR is inadequate in any way. The DFMP and DEIR utilize current, statistically valid forest inventory information.

Validation: The IFI inventory was check cruised to rigorous standards and found to be accurate. The 1995 validation project was a preliminary work product. Its objective was to bring the IFI inventory data into a spatial GIS context. This was the beginning of a larger effort to begin a sustained yield plan project. The validation project was replaced by the sustained yield plan / habitat conservation plan project, starting in 1996.

This communication cited in this comment in regards to the validation project is quoted out of context. The remainder of the communication reveals that no concern about inventory accuracy existed. No particular problems were encountered beyond what is normal in inventory updates and data management.

Group Selection: Group selection is defined as an uneven-aged silvicultural method in forestry. The management plan proposes that the majority of JDSF acreage be managed under uneven-aged methods. It is also important to recognize that as part of JDSF's research and demonstration forest, the management plan attempts to maintain flexibility to implement as wide a range of different silvicultural methods as possible.

Response to Comment 241.11
The management plan describes in detail the criteria and decision process used in developing the five-year harvest schedule. JDSF foresters used IFI results along with other information including professional judgment and knowledge of on-the-ground conditions to develop the silvicultural allocation plan and the five-year schedule of THPs. This constitutes the standard of practice in the industry.

Response to Comment 241.12
The comment fails to include a critical component of the Forest Practice Rules (FPR) applicable to maximum sustained production (MSP). The code and regulation quoted in the comment provide guidance regarding MSP, while the FPR include a set of rules that THPs need to comply with to demonstrate MSP. The DEIR provides a discussion of the current rule requirements regarding MSP. Achieving MSP through compliance with the FPRs should also fulfill the Board's direction to manage State Forests to achieve MMAI. The Draft Management Plan and THPs on JDSF follows all the laws, regulations and policies pertaining to maximum sustained production, including the CMAI/MMAI mandate.

The CMAI construct by definition applies only to stands managed under even-aged silvicultural systems. The majority of the acreage on JDSF is managed under uneven-aged silvicultural systems, making CMAI a non-issue on the majority of JDSF acreage.

It is true that the point of CMAI for coastal redwood on medium to poor sites is not as well defined as for other conifer species in this area. The CMAI concept as used in forestry however, usually refers to stand growth not individual tree growth. Few if any stands on JDSF consist purely of redwood trees. Most stands contain a mix of redwood with other species such as Douglas-fir, for which the age of CMAI is well established. Consequently, the range of rotation ages we plan in the Management Plan are intended to bracket the age of CMAI.

The CMAI policy must be interpreted in context with all of the other BOF policies JDSF must comply with, in addition to the Forest Practice Act and the Forest Practice Rules. JDSF must balance the CMAI mandate with the requirement to annually sell high yield timber sales,

contribute to the local economy, and research and demonstrate a wide range of forest management practices. Elevating the CMAI policy to a status of exclusive priority would violate all of these other mandates.

CDF's approach to meeting all of the policies of the BOF has not changed since the last management plan in 1983. The BOF approval of the 1983 Management Plan indicates that CDF's balancing the CMAI mandate with other BOF policies as well as laws and regulations, meets the overall mandate of the BOF as expressed in their policies.

Some stands on JDSF, primarily on the east end, are below optimum conifer stocking according to many criteria. Achieving maximum sustained production in these stands may indicate harvesting before the age of CMAI.

Identifying the ages of CMAI for coastal redwood forests is an area of research that JDSF has engaged in for some time and that will continue as part of the research and demonstration mandate. Stands in old growth groves and many second-growth stands currently have and will develop rotation ages to bracket the CMAI of redwood trees.

Response to Comment 241.13
This conclusion is based on a misunderstanding of the requirements of the FPRs and the interrelation of the various documents that will govern JDSF management. As indicated in the DEIR, the management plan and the Option A plan to which the THPs will be tiered clearly demonstrates that all THPs on JDSF will achieve maximum sustained yield.

The discussion of criteria for developing the 5-year short-term harvest schedule includes management objectives articulated in the management plan, and stand manipulation priorities. Both criteria include the CMAI objective.

Response to Comment 241.14
The allowable cut is clearly defined in the DFMP. The management plan references the JDSF Option A plan for details of the methods used and modeling results used in deriving the allowable cut. CDF believes the JDSF Option A plan objectively establishes that this harvest level is sustainable and will not degrade forest values.

Response to Comment 241.15
This statement is not entirely correct. The inventory methodologies and growth estimations used to determine the allowable cut figure for the DFMP were evaluated as part of the DEIR process. JDSF has used currently accepted inventory methodologies conducted under the supervision of an RPF. Likewise, the growth estimations were conducted appropriately. When reviewed in its entirety, the determination of allowable cut in the DFMP is a conservative figure that should be below forest growth for at least the next several decades. The DFMP clearly outlined the process used to determine the allowable cut figure, and the DEIR conducted a review of that process and found it to be acceptable. There are many ways to conduct forest inventories and growth estimates. They each have strengths and weaknesses that need to be evaluated to determine the most appropriate method for a given set of circumstances.

Developing and conducting appropriate forest inventories and growth estimates for an ownership falls within the realm of professional forestry and professional foresters supervised the JDSF inventory and growth estimations. The comment indicates disagreement with the methodologies used, but this disagreement does not mean that the methods used or the results are invalid or incorrect.

Forests are characterized by very large areas and a large number of individual trees per acre, making inventorying parts of the forest each year and updating for growth and harvest on remaining acres a common practice. It is not uncommon for forest inventory data to be 10 – 15 years old. CDF's inventory efforts are continuously ongoing; parts of the Forest is inventoried each year. CDF's inventories and growth estimations reflect the standards of practice in the profession.

Response to Comment 241.16
The purpose of the Management Plan is to provide on-the-ground management guidance for JDSF foresters. The determination of the allowable cut and its supporting analyses is contained in the Option A plan for the Forest. The Option A plan includes the type of information requested in the comment regarding reduction of harvest potential in special concern areas. The Option A plan for JDSF has been submitted for approval to CDF Forest Practice and is currently under review.

The allowable cut calculation method used in past management plans and referenced in the comment is one possible approach to estimating an allowable cut. Many other approaches exist, including the approach used in the JDSF Option A plan. An allowable cut based solely on growth estimates and acreage reduction factors permits only a rudimentary ability to recognize constraints on timber production from other forest values. Such an approach allows no facility for evaluating the long-term consequences of proposed actions, an essential step in deriving a sustainable harvest level for forest stands, which can take many decades to grow to maturity. A long-term harvest schedule as used in the Option A plan, with explicit recognition of constraints on timber production from other forest values, allows a much more accurate estimate of the allowable cut. CDF believes the projections of forest growth used in the Option A plan accurately estimates true growth rates on the Forest.

Response to Comment 241.17
CDF believes the allowable cut estimate is conservative and constitutes an objective and accurate estimate based on the best available data. The methods used to arrive at the estimate are standard and practice in the industry and they are well documented.

The illustrative calculation provided to support the submitter's statement is meaningless in its oversimplification. Restricted acres are only in rare cases entirely removed from timber production; most often restrictions call for some kind of light harvest regime. Different stands in different areas of the forest have different rates of growth. The 1999 CFI data represents the most recent estimate of current growth on the forest.

Response to Comment 241.18

The DEIR does not and is not required to include all public comments submitted at the scooping sessions.

Response to Comment 241.19
Several comments request changes in the language of the management plan to correspond to the opinions of the submitter. CDF recognizes that there may be disagreements on many of the statements in the management plan. CDF however, believes the management plan, as supported by the EIR, is correct in its current form, and is based on substantial data, solid science and high professional standards.

The question the EIR needed to address is, given the current condition of the Forest, will the proposed action result in significant environmental effects. The EIR includes substantial discussion on past harvesting and silvicultural methods used on the forest that have resulted in the development of the current Forest condition. The effects of the proposed action on timber inventory and maximum sustained production of high quality forest products (MSP) is addressed in EIR section 6.3.6 Timber Resources – Project Impacts. The EIR found that when the proposed harvest levels are compared to either the measured growth or the modeled estimated growth, there would not be a significant environmental effect. This determination is based on forest inventory methods and forest growth modeling conducted under the supervision of RPFs. The DEIR, the DFMP and the Option "A" document all recognized the potential for discrepancies between modeled growth and measured growth. The DEIR determined that the periodic forest inventory updates were appropriate to monitor the relationship between modeled growth, measured growth, forest inventory levels and harvest levels.

Response to Comment 241.20
Several comments request changes in the language of the management plan to correspond to the opinions of the submitter. The comments presented are largely subjective opinion. CDF recognizes that there may be disagreements on many of the statements in the management plan. CDF however, believes the management plan, as supported by the EIR, is correct in its current form, and is based on substantial data, solid science and high professional standards.

Response to Comment 241.21
The commenter has presented no convincing evidence of inaccuracies in JDSF's inventory data, but merely speculative theories of "likely" problems with JDSF's inventory data and analysis. The JDSF inventory data support the statements made in the management plan and the DEIR. Comments focus on past management practices and largely disregards the management practices proposed in the DFMP currently under review. For example, it is true the old growth trees have been largely harvested from JDSF under past management plans. However, the transition from old growth harvesting to young growth management was considered beneficial, and demonstration of the orderly transition was one of the primary objectives of the State Forest

System. The DFMP focuses on retention of the remaining old growth and demonstrating continued management of young growth forests. The EIR recognized this and indicated that significant impacts to existing old growth resources are likely to occur.

The increase in miles of road reflects the relocation of roads from lower slopes with higher potential for impacts, to upper slopes with lower potential impacts. Although road miles may have increased, impacts have decreased. The road management plan included in the DFMP will continue this trend. This was recognized in the EIR.

Caspar Creek and Hare Creek were among the first areas logged during the original old growth logging, and therefore included the oldest young growth on the Forest. When JDSF started to harvest young growth, it was logical to start in the areas with the oldest young growth, with no thought given at the time to seral stage distribution. The clearcut harvest in the North Fork Casper Creek is part of the long term Casper Creek Watershed Study that has produced significant new understanding of forest management impacts.

Points (d) and (e) in this comment are misinterpretations of data as showing a negative impact or declining trend across the forest. Point (d) relies on figure 1 of the 1983 FMP, which shows a change in size class distribution over time, to indicate a declining trend. This data when considered alone is not enough to make such an interpretation. When additional factors such as age and volume are included, the size class distribution can be seen in perspective. When a stand increases in age and volume, as the other figures and tables in the 1983 management plan indicate, it would be expected to see an overall decrease in trees per acre and a shift in size class distribution with fewer smaller trees. This is indicated in figure 1 referenced above. Point (e) is a continuation of previous comments in general disagreement with current inventory results. However, the CDF document included as comment attachment VN-IN-11 demonstrates that the CFI inventory, when properly adjusted using the corrected diameter to height ratios, indicates a steady increase in forest inventory. As a final note, the EIR indicates that ongoing monitoring and studies show generally improving trends in watershed condition.

Response to Comment 241.22
It is not correct to assume that specific details of activities for the next five years are known now. Rotation ages, cutting cycles and specifics of silvicultural prescriptions are only specified in broad categories. Harvest plan boundaries, yarding methods, stream classifications, species occurrence during the year of operations and numerous other details are not know for individual projects. Completing a detailed analysis of these potential future projects would require a large amount of speculation and result in very uncertain findings. A detailed analysis of future harvesting will occur on a project basis through the THP review process. This tiered approach is in compliance with CEQA guidelines and is appropriate for the proposed management plan.

Response to Comment 241.23
CDF believes the statement is an accurate reflection of the contents of the management plan.

Response to Comment 241.24
The management plan strives to integrate all the plans for different disciplines into one consolidated management plan. CDF believes the recreation portion of the management plan is a solid basis for management guidance as well as public participation.

Response to Comment 241.25
Guidelines for forest management in neighbor buffers are spelled out in the management plan. Because of an infinite range of individual management situations, professional expertise of resource managers in each particular case guided by direction in the management plan is preferred. This is standard accepted methodology.

Response to Comment 241.26
The Railroad Gulch study is a long-term research installation. Logistical factors such as funding and staffing level commonly warrants modifying original study plans. CDF believes the Railroad Gulch study experimental design is robust to changes in treatment timing and the study continues to be viable.

Response to Comment 241.27
The Mendocino Woodlands special treatment area includes a portion of the Thompson Gulch watershed. The Thompson Gulch watershed also extends upstream beyond the boundary of the STA. One of the potential timber harvest operations identified in the short-term harvest schedule includes a portion of the Thompson Gulch watershed. The exact boundaries of the timber operations are not yet known. Those depicted on the figure constitute a very rough estimate. The upper Thompson Gulch operation, to the extent that specifics are known, will include a demonstration of silviculture designed to accelerate the recruitment of late-seral forest habitat. The specifics of the silvicultural prescription are unknown, and will not be known until such time as CDF personnel evaluate the area and consult with applicable fish and wildlife agencies on prescription design. DPR will also be consulted for that portion of the operation that may include the STA. The Department will not speculate concerning the specifications of this potential future plan or the environmental effects that may occur.

Response to Comment 241.28
Walter S. Roundtree, Deputy Attorney General, in opinion 47-4 (March 31, 1947) provided an interpretation of the types of uses that would be allowed in the Mendocino Woodlands Area based on the language contained in the transfer deed. In that opinion, a letter from the Assistant Secretary of the Interior dated October 31, 1946 is quoted as follows:

"I also believe that the harvesting of forest products in accordance with recognized conservation principles and practices, and the conducting of forest experiments and demonstrations would be compatible with the term "conservation purposes," since it is generally acknowledged that such economic and scientific utilization of timberland areas ultimately results in the conservation of our forest resources."

The Deputy Attorney General concurred with the Assistant Secretary of the Interior that the language of the deed does not preclude the logging proposed by the state.

Response to Comment 241.29 and 241.30
The forested landscape of JDSF is a constantly changing mosaic characteristic of a living ecosystem. The direction and rate of change varies with an almost infinite number of factors. This variability defies the imposition of rules, thresholds and quantitative standards. This issue is best dealt with on a case-by-case basis using professional judgment of experienced foresters familiar with the local conditions.

Response to Comment 241.31
The discussion of impacts on recreation in the DEIR uses standard techniques for analysis. CDF believes this discussion follows the standards of practice in the industry and is a meaningful basis for informed decision-making and public participation.

Response to Comment 241.32
An economic analysis of the alternatives is included in the DEIR. The estimate of employment related to timber harvest uses standard techniques for estimating short and medium term employment changes. Long-term studies of unemployed timber workers have demonstrated that workers do find other employment after their unemployment payments run out of if new opportunities emerge. The length of unemployment has been documented to be up to two years in many cases. Many workers have to take employment at jobs paying closer to the average wage in the county as opposed to the higher wage they received for their specific skill set in the timber industry. Economic costs to the state unemployment fund and individual workers will be high and directly proportional to estimated wage losses.

Response to Comment 241.33
A review of the economic effects and employment opportunities at JDSF from hiking, wildlife viewing, mountain biking, kayaking and general forest viewing showed no conflict between the recreation open access policy on JDSF and the limited acreage in timber harvests – they are complementary.

Tradeoffs between recreation values and timber values were considered in detail in the Option "A" harvest schedule that determined the allowable cut.

BH-242 and BH-311

Christopher Rowney
P.O. Box 944246
Sacramento, CA 94244-2460

July 16, 2002

Comments on Draft Management Plan and Environmental Impact Report for Jackson Demonstration State Forest.

Under the section titled Timber Sales Program Page 57 of the Draft Management Plan it is stated that the timber harvesting operations will be the same type that has been in place for the past 40 years. This approach fails to take into account the changes that have taken place and points up the need for a new approach to the management of this demonstration forest, one that is forward looking in its vision, rather than relying on the outmoded practices of the past.

1 The most recent and dramatic local change in the timber industry is the closing of the sawmill owned most recently by Georgia-Pacific in Fort Bragg. This mill has been a steady participant in the bidding process for the large sales that are described in the Management Plan. Other large mills with the capacity and means to bid on these large sales in the region have also closed and more probably will. This trend means that the ability to bid on and buy the large sales proposed will be limited to a very few individuals and companies.

2 Offering 30 million board feet of standing timber per year in three to five sales needs to be evaluated in light of the above. The possibility of a very few individuals with the means to bid on these multi-million dollar sales to control the price bid needs to be considered and evaluated. Another issue that needs to be considered and evaluated is the effect 30 million board feet of timber will have on the ability of small timberland owners to sell their timber for a fair price to the mills, especially during periods of reduced demand for lumber.

3 Another recent development in the timber industry has been the proliferation of efficient versatile portable sawmills. In the last decade hundreds have been sold in Northern California. I am an owner- operator of a small portable sawmill and have represented other mill owners in the past, most recently when the County of Mendocino was considering changes in planning and zoning codes concerning portable sawmills. The County concluded that portable sawmills were permitted in all zoning, provided they were directly connected to an active building site.

I was pleased with this result; it creates job opportunities for portable mill owners from people that want to mill a few trees from their own property for a building project. It also allows people that are building custom homes to have logs delivered to the building site and have them cut to their exact specifications.

3 It is with this aspect that I believe JDSF could play an important role. There is a need for a continuous reliable source of high quality logs, if this employment opportunity for portable sawmill operators is to be realized. Buying logs from private sources in small

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3 lots is complicated by timber harvest regulations and the payment of yield tax, which was designed for the convenience of large sawmills. It would be most helpful if JDSF would commit to selling logs at market price. JDSF does occasionally sell small amounts of salvage timber but the buyer has to do the logging and mill owners are not necessarily loggers. Even for those who have done this in the past, it is not a constant source of supply.

4 The Management Plan needs to provide a thorough consideration of changing the present practice of selling large blocks of standing timber to selling logs in varying size lots sorted by size and species that would be available to all citizens instead of a privileged few individuals and corporations.

Bill Heil
P.O. Box 67
Albion CA, 95410

Bill Heil

Letter BH-242 and BH-311 (duplicate letters)

Response to Comment 242.1
Please refer to General Response 1. This section of the DFMP discusses the process JDSF staff will go through to sell timber and is outside the scope of the DEIR.

Response to Comment 242.2
The DEIR focuses on the environmental impacts of the DFMP as required by CEQA. Social and economic effects are not considered environmental effects under CEQA.

Response to Comment 242.3
Please refer to general response 1.

Response to Comment 242.4
Please refer to General Response 1. The DEIR focuses on the environmental impacts of the DFMP as required by CEQA. Social and economic effects are not considered environmental effects under CEQA.

DT- 247

Mendocino Woodlands
Camp Association

A National Historical Landmark
A Nonprofit Corporation since 1948

Post Office Box 267
Mendocino, Ca 95460

Call 707 937 5755
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July 17, 2002

Christopher P. Rowney
Deputy Chief, State Forest Program
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, Ca 94244-2460

Dear Mr. Rowney:

This is the Mendocino Woodlands Camp Association's (MWCA) comments on the Draft Environmental Impact Report (DEIR) and response to the proposed Jackson Demonstration State Forest Management Plan (DFMP) put forth by the California Department of Forestry and Fire Protection (CDF). Due to limited time, MWCA has focused its review and comments on those areas that most directly affect its values. Because of the Mendocino Woodlands' historical value, and for the uninterrupted enjoyment of the public for whom the Mendocino Woodlands was created, and because MWCA provides excellent and complete nature education programs, MWCA requests that the entire original park be placed under the jurisdiction of the California Department of State Parks and Recreation. 1

To review its history, the United States Government created the Mendocino Woodlands Recreation Demonstration Area and subsequently gave the 5,425-acre park to the people of California in 1947 with a mandate that "said property shall be used exclusively for public park, recreational, and conservation purposes.". MWCA has operated and maintained the federally-created park, now known as Mendocino Woodlands State Park, since 1948. In 1997, the park was designated a National Historic Landmark because of its significant importance to the history of the United States.

MWCA has developed many environmental education programs to augment the public's use of the park and fully comply with the state's original environmental education mandate. MWCA's most successful educational program is the Residential Outdoor Science School (ROSS). During a twelve-week period every spring, about 1,000 students in 4th through 8th grades attend programs lasting four or five days. They stay in cabins on-site and study in small field groups of 10 students each under the guidance of a professional MWCA teacher/naturalist. An integral and important part of ROSS, they rely on the trail system that follows the terrain throughout the original federal park's watershed, most of which lies within the Mendocino Woodlands Special Treatment Area (MWSTA).

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Christopher Rowney
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2 In addition to ROSS, numerous outdoor education programs are provided to the general public throughout the summer and fall that engage the MWSTA. Over 15 miles of historic and contemporary trails exist in the MWSTA and are used for education and recreational purposes. In addition, camping groups include educational institutions such as the University of California (Berkeley and Davis), and many school classes (K thru 12), from throughout northern California.

3 This is a very popular place—MWCA generates 28,000 camper days each year at the Mendocino Woodlands State Park. Campers come to enjoy the wonders of our natural environment and see how well the forest has been able to recover, naturally, from the excessive logging of the past. It is the consensus of campers that the highest and best demonstration and educational value for the MWSTA is in its continued, natural growth towards a late-seral habitat and not in viewing the various ways trees can be harvested.

4 The CDF would be in complete compliance with the intent of the original federal mandate for the Mendocino Woodlands if it allowed the MWSTA to regenerate itself naturally. It could be designated a control area where "no harvest" treatments are compared to other, harvested areas. This would provide a basis from which CDF can evaluate the effectiveness of its recruitment of late-seral habitats in other locations. The forest must have its biomass left in place to build what is truly a naturally occurring late-seral habitat (pg. 61, 67 DFMP). If the CDF feels it must cut trees to recruit late-seral habitats, then let the trees remain where they drop to more closely model a naturally forming late-seral habitat by contributing their woody debris to the forest floor. This would promote a healthy habitat for the endangered Marbled Murrelet and insure minimum silting in the Little North Fork Big River, thereby protecting the emerging Coho salmon and Steelhead trout spawning there.

5 The MOU mentioned on pages 85 and 177 of the DEIR did not include any of the recommendations from MWCA. Additionally, an MOU, by its very nature, does not provide for any lasting protection of the MWSTA. MWCA therefore requests that the DFMP specifies a setback of at least 300 ft. from: all road and trail corridors within the MWSTA, all Mendocino Woodlands State Park boundaries, and all water sources for the park. In addition, there should be "no harvest" zones for all areas that have a significant visual impact on the use of said roads and trails.

6 The Railroad Gulch Silviculture Study (pg. 151 DFMP), also referred to as the Helms Sale Area (pg 56 DFMP), is rampant with Pampas Grass. This can be attributed to the management techniques that allowed too much sun to reach the forest floor and thereby encouraged the invasive encroachment of this non-native species. When recently contacted, professor Helms stated that he has no further interest in the study of this plot of land and it no longer has any connection with the university. Extensive eradication and restoration work needs to be completed to restore the natural balance of indigenous species.

7 There is one major outholding (pg. 381 DEIR) of approximately 800 acres that is now more than 85% contained by State Parks property, both the newly acquired Big River and Mendocino Woodlands State Parks. This portion should be set-aside as a "no harvest" area since any harvesting activity would be extremely intrusive on the surrounding parks and have a negative impact on their use.

The Heritage Resources Management section (pg. 351 DEIR) states, "…the Woodlands Special Treatment Areas contain a significant heritage resource. The Mendocino Woodlands Outdoor Center [sic; now Mendocino Woodlands State Park] was listed as a National Historic Landmark in 1997. JDSF Silviculture activities have the potential for adverse impacts to the cultural landscape associated with
8 this heritage resource. However, those potential risks are addressed and removed through careful development of THPs [Timber Harvest Plans] with full consideration of potential impacts to these special heritage resources." In fact, past timber harvests in the MWSTA have resulted in significant losses of historic landscape structures. The best way to insure no damage is done to this historic site would be through "site avoidance", as stipulated in the Jackson Demonstration State Forest Management Plan (pg. 79 DFMP).

The Surrounding Land Use section (pg. 54 DEIR) states "The greatest potential for conflict, between JDSF and private land owners in the Rural Residential areas where harvesting practices on JDSF could
9 indirectly impact the private lands. Examples of these impacts are aesthetics, loss of wildlife on the private lands, and noise impacts." The transfer of all the remaining acreage from the original Mendocino Woodlands Recreation Demonstration Area into California Department of State Parks and Recreation's management would permanently remove this potential for conflict in the area between County Roads 408 and 409. Such a transfer would also protect the known habitat of the endangered Marbled Murrelet
10 and the upper Russian Gulch watershed.

There is mention in Aesthetic Resources (pg. 82 DEIR) that "Impacts of timber harvest operations as they affect the Mendocino Woodlands State Park and Outdoor Center, a National Historic Landmark, in terms of the of visual, atmospheric or audible elements that diminish the integrity of the property's
11 significant historic features would be evaluated based on the Criteria of Adverse Effect of the Advisory Council on Historic Preservation (36 CFR Part 800). This evaluation is described in Section VII-9: Heritage Resources." The appropriate sections from this source were not provided. MWCA requests a copy of the standards by which you will evaluate the impact on the Mendocino Woodlands State Park be made available to the public.

12 The DFMP should clearly state that the CDF would not proceed with any THP until it has been not only reviewed, but also agreed upon by the California Department of Parks and Recreation.

The best way to avoid conflicts between timber harvests and the adjacent Mendocino Woodlands as
13 outlined on page 20 of the DEIR is to use the MWSTA as a "no harvest" control area. This would prevent unnecessary interruption or loss of facilities or resources essential to park operations.

There is a pending boundary expansion of the existing Mendocino Woodlands Recreational Demonstration Area National Historic Landmark which is not referenced in the DFMP. This expansion process was put on hold at CDF's request, until the Big River Phase One purchase could be completed and discussions held about subsequent plans that would allow for the possible acquisition of additional Big River timberland which could then be traded for the original parcels that made up the MWRDA when it was deeded to California in 1947. The DFMP should include a reference to the pending historic
14 boundary expansion and how that may effect usage of the MWSTA. The Big River purchase has been

Christopher Rowney
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14 completed and MWCA would like to see a moratorium on all management activity within the MWSTA until such time as the disposition of that land can be determined.

We find the proposed Jackson Demonstration State Forest Management Plan to be too vague and arbitrary to be useful in the protection and well-being of Mendocino Woodlands, a rare national treasure.

As is made clear by the points outlined above, there are two ways in which the Mendocino Woodlands Special Treatment Area can be permanently protected by the CDF:

13 1. Make the entire MWSTA a "no harvest" area and cease all logging activity within its boundaries while making provisions for restoration of any areas that have been negatively affected by logging operations.

14 2. Upon completion of phase two of the Big River purchase, trade the MWSTA property for an equal portion of the purchased land, which will reunify the original Mendocino Woodlands Recreation Demonstration Area, maintaining a moratorium of all logging activities during this process.

Sincerely,

Don Taylor
Executive Director

Cc: Gray Davis, Governor
Wesley Chesbro, Senator
Virginia Strom-Martin, Assemblymember
Mary Nicoles, Secretary for Resources
Greg Pickard, District Superintendent, Department of Parks and Recreation

Letter DT-247

Response to Comment 247.1
The DEIR did not identify significant environmental impacts that would require mitigation by transferring the jurisdiction of Mendocino Woodlands STA or original park area from CDF to the California Department of State Parks and Recreation.

Response to Comment 247.2
Pages 404 and 405 of the DEIR discuss the existing trails within the MWSTA. Road and trail buffers are discussed on DFMP page 147 and DEIR page 411, and are depicted on DEIR Figure H.

Response to Comment 247.3
Refer to DEIR page 400 for a discussion of the legislative direction for the MWSTA, including education of the public on the utilization of natural resources.

Response to Comment 247.4
CDF operations as currently conducted and as proposed in the DFMP are in complete compliance with the original federal mandate for the Mendocino Woodlands. Later seral habitat development, marbled murrelet habitat and anadromous fisheries concerns have all been thoroughly addressed in the EIR. Please refer to General Responses 4 and 5.

Response to Comment 247.5
The MOU between CDF and State Parks is accurately summarized in the DEIR. The DEIR did not identify significant environmental impacts that would require mitigation by establishing a 300-foot no harvest buffer around the features described in the comment.

Response to Comment 247.6
Although Professor Helms may no longer be associated with the study area, the Railroad Gulch study is a long-term research installation. Logistical factors such as funding and staffing level commonly warrants modifying original study plans. CDF believes the Railroad Gulch study experimental design is robust to changes in treatment timing and the study continues to be viable. Treatment of the invasive pampas grass is addressed as part of the integrated weed management approach included in the DFMP. Implementation of a harvest plan to continue the study in the area would provide CDF the opportunity to implement a weed management strategy at the same time. The two actions are not exclusive.

Response to Comment 247.7
The DEIR did not identify significant environmental impacts that would require mitigation by establishing a no-harvest area for approximately an 800-acre outholding.

Response to Comment 247.8
Refer to general response 2.

Response to Comment 247.9
The DEIR did not identify significant environmental impacts that would require mitigation by transferring the jurisdiction of Mendocino Woodlands STA or original park area from CDF to the California Department of State Parks and Recreation.

Response to Comment 247.10
The DEIR found that implementation of the DFMP would not result in significant impacts to marbled murrelets. However, comments such as this and others from State Agencies and the public regarding marbled murrelets in Russian Gulch, have led CDF to develop an additional MAMU habitat enhancement area. Refer to response to comment BH-49.5 and 49.6 for additional information.

Response to Comment 247.11
MWCA requests that a copy of the ***Criteria of Adverse Effect of the Advisory Council on Historic Preservation*** (36 CFR Part 800) be provided. The criteria are a part of the Code of Federal Regulations and are available to the public in a number of different venues, including libraries and the Internet. Please refer to General Response 2.

Response to Comment 247.12
CDF is the lead agency responsible for approving THPs. However, as discussed on DEIR page 400, CDF solicit and consider the recommendations of State Parks as part of the THP process for plans in the MWSTA.

Response to Comment 247.13
The DEIR did not identify significant environmental impacts that would require mitigation by designating the MWSTA a no harvest area.

Response to Comment 247.14
The application for boundary expansion was placed on hold by the National Park Service due to objections from CDF and significant questions and concerns raised by the California State Historic Preservation Office. The Mendocino Woodlands Camp Association has been the main proponent of the boundary expansion without the support of CDF. The proposal to trade the MWSTA for recently acquired land in the Big River Drainage is speculative and beyond the scope of this EIR.

KH-248

Kristina Haddad
Forest Program Coordinator
Environment Now
2515 Wilshire Blvd.
Santa Monica, CA 90403

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July 16, 2002

Christopher P. Rowney, Program Manager
Demonstration State Forests
California Department of Forestry and Fire Protection
1416 – 9th Street
Sacramento, CA 95814
Via Federal Express

Jackson Demonstration State Forest
Draft Management Plan and dEIR

Dear Mr. Rowney:

We appreciate the opportunity to provide comments regarding the Jackson Demonstration State Forest Management Plan and the draft Environmental Impact Report on the Plan. Jackson is a unique resource for all of those who are interested in innovative forest management.

Although the Forest Management Plan (FMP) and the draft Environmental Impact Report (dEIR) cover many issues, we will focus on only a very few. In general, the new FMP is a very significant improvement over the old 1983 Plan. The managers of the forest have made impressive strides in recognizing the increasing importance of systematic planning for watershed and wildlife values. We were particularly pleased to see that the new Plan has elevated "wildlife and other resources to a level of importance equivalent to the timber management and the research, demonstration and education programs." (dEIR page 261) We hope that implementation of this more broadly defined mission will help to resolve the basis of the controversies that have dogged Jackson during the past decade.

It is in the spirit of offering support for the resolution of previous problems that we make the following observations:

Marbled Murrelets
Although the dEIR is somewhat ambiguous in the matter, it is our understanding that marbled murrelets, listed as endangered under the California Endangered Species Act (CESA) and as threatened under the federal ESA, are definitely known to be nesting in Russian Gulch State Park, probably within a few hundred yards of the boundary with Jackson. These murrelets occupy one of only four confirmed nesting sites in the region between the north Mendocino County line south to Monterey Bay. Yet, the upstream reaches of Russian Gulch that are located on Jackson are designated to be part of the timber production program.

1 The federal Recovery Plan for marbled murrelets has strongly recommended that all known murrelets in the region where Jackson is located be provided with the greatest protection possible. We recommend that the area around the headwaters of Russian Gulch be set aside for protection of these marbled murrelets.

2 Additionally, the Recovery Plan has called for the creation of new suitable nesting habitat for murrelets. This action is only feasible at a large scale on public land that has forest attributes that can be developed into nesting habitat and that has proximity to the ocean where these birds must feed. Jackson fills these requirements admirably.

3 Further, as a "demonstration" forest, this worthy goal of developing additional habitat fits squarely within the mandate of the forest. We recommend you work with recognized murrelet experts to identify the most suitable habitat available for development of the forest characteristics required by nesting marbled murrelets. This demonstration will provide timely information on how to accelerate development of the needed habitat features.

Clearcutting
We are happy to see that the FMP indicates that traditional clearcutting will not be utilized as a forest management technique except in unusual circumstances. However, the FMP and dEIR indicate that you do plan to log using the "variable retention"

4 method. We appreciate that you are trying to make progress in this area. However, we must point out to you that any large-scale removal of forest cover in a single operation, even if certain trees and clumps of trees are left to enhance wildlife values, is likely to be viewed by most members of the public as a clearcut under a different name. Regardless of your views of the utility of this sort of logging from the point of view of timber production, there is no question that logging of this sort is not supported by the public.

4 As long as you are clearcutting, no matter what you call it, the public is not going to like it. Eliminating clearcutting in any of its guises is a necessary first step toward regaining the public's confidence regarding Jackson. We recommend that you take this step now.

FSC Certification
We support the Forest Stewardship Council (FSC) standards for certification of forest management sustainability. These standards have been developed over the past decade with input from a wide variety of professionals and other interested parties to address

the full array of timber management issues. Additionally, the FSC certification allows consumers to identify products that have been produced using sustainable forestry practices.

5 With Jackson's increasing emphasis on a full range of forest management objectives, FSC certification is likely to be more feasible. By participating in the process, Jackson can take advantage of the many years' work that have been put into development of the standards and the expertise that has been developed by the certification team. This interchange is likely to assist you in continuing to develop new and innovative ways to
5 achieve the goals you have articulated in the FMP. We recommend you begin the certification process as soon as possible.

Again, we congratulate you on the release of the new Forest Management Plan. Your consideration of our recommendations would be appreciated.

Sincerely,

Kristina Haddad

Kristina Haddad
Forest Program Coordinator
Environment Now
2515 Wilshire Blvd.
Santa Monica, CA 90403
Phone: 310.829.5568, ext. 3

3

Letter KH-248

Response to Comment 248.1
Please refer to Response WW-237.2.

Response to Comment 248.2 and 248.3
Please refer to Response WW-237.4 and General Response 5.

Response to Comment 248.4 and 248.5
Please refer to General Response 1.

RS-249

ROGER STERNBERG
Forestry & Land Conservation Consulting Services
PO Box 1472 · Mendocino, CA 95460 · 707.937.3077 ph/fax · rsternberg@mcn.org

July 16, 2002

Mr. Chris Rowney, Program Manager
Demonstration State Forests
California Department of Forestry
and Fire Protection
P.O. Box 944246
Sacramento, California 94244-2460

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Dear Mr. Rowney:

I am submitting the following comments on the Draft Jackson Demonstration Forest Management Plan and Environmental Impact Report at the request of the Sierra Club California. I have been asked by the Sierra Club to do an independent assessment of certain elements of the Draft Plan and EIR. The following comments are based upon my own professional judgment and experiences on-site at Jackson Demonstration State Forest (JDSF).

I am a Registered Professional Forester and have been a private consulting forester since 1998. During the period of 1998-2001, I also was the part-time Executive Director of the Mendocino Land Trust. Prior to that I was the Director of Forestland Conservation for the Pacific Forest Trust in Boonville, California. I have a Master of Forestry degree from Yale University and ran my own forestry business in Vermont for seven years.

General Comments and Observations

As a mountain biker, I use JDSF on a regular basis. Overall, I have found most of its forest management to be compatible with my recreational activities. JDSF is a valuable recreational resource to me and to many others of the public who take advantage of its trails and roads.

Some years ago, I reviewed the 1983 JDSF Plan and found it to be lacking in addressing non-timber values like wildlife. It is good to see a considerable change since then, with the new Plan paying much more attention to wildlife, watershed protection, and late seral forest management.

The level of stocking at JDSF – 43,000 mbf/acre – is far greater than not only private industrial, but also most private non-industrial timberlands in Mendocino County. Over the last 50 years, JDSF has taken a poorly managed, understocked forest and developed it into a very impressive forest. In large part this is due to its conservative level of harvests, which consistently has been lower than growth rates (p. 22, Jackson

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Demonstration Forest. Option A Plan for Achievement of Maximum Sustained Production of High Quality Timber Products, 5/9/00). It is important to note that JDSF is continuing to harvest conservatively -- between 1.55 % 1.65% of inventory per year, which will build inventory over the next decade.

Most recently, while biking in JDSF, I happened to notice the large woody debris (LWD) placed in Hare Creek. This work was so well done that to the casual observer, the LWD looked as if it was naturally occurring. It is this kind of exemplary work that should be a standard for all management and research activities on JDSF.

For the sake of brevity, I have enumerated the following additional comments and recommendations on both documents.

1) Insufficient Data: As a forester, I find that the information provided on silvicultural practices and stand characteristics is insufficient to ensure attainment of enunciated objectives in the Draft Plan and EIR. In general, the documents do a good job qualitatively describing desired outcomes, but don't provide fundamental quantitative information.

To be specific, the various silvicultural systems are briefly described, defined by acreage and are mapped. Yet basic information on timber stand characteristics including species composition, age classes, projected growth, present stocking level, present volume per acre, size class distribution, residual volumes under uneven-aged management, and similar characteristics projected over the planning horizon by management compartment is missing. While the Draft Plan may not be required to provide this information, as is the case for the preparation of Non-Industrial Timber Management Plan (California Forest Practice Rules, Section 1090.5), this is basic information needed by present and future forest managers to guide their actions and for the public to understand how the Plan is going to be implemented.

As someone who strongly supports JDSF's mission to demonstrate sustainable timber and non-timber resource management, I find that this lack of information weakens the case that JDSF will be practicing forest ecosystem management. At a time when JDSF's management is being severely criticized and public confidence seems low, more information, versus less, is needed.

JDSF managers express a legitimate concern that the more detailed the information provided in the Plan, the more constraints will be placed on their management. Noss et al (The Redwood Forest, 2000), in fact emphasize the need for managers to retain flexibility in managing large tracts of forestland:

> *Historically, silviculture has focused on site-specific or stand specific prescriptions. It has become increasingly clear, however, that to meet conditions of ecological sustainability, managers must look beyond the individual stand-specific treatments that will ultimately achieve desired future conditions on the landscape scale. The "big Picture" view so necessary for conservation of the biological values of redwood forests (see chap. 7) therefore is also necessary for improved management of redwoods for timber. A big-picture approach requires the flexibility to apply a broad range of stand-specific management treatments and a decision-analysis process adequate to determine the appropriate mix of management activities across the landscape and through time.*

In crafting the Draft Plan, JDSF staff has put considerable effort into presenting this "big picture," but the picture as currently written is incomplete, because it doesn't project what will be happening spatially or temporally in individual management compartments. Flexibility of management will not suffer by providing this data so long as a range of silvicultural prescriptions can be applied in each compartment.

In an effort to garner more information, CDF staff referred me to the JDSF Option A Plan, which was used to fulfill the requirements of the California Forest Practice Rules to "disclose sustainable management, a balance growth and harvest over time, and protect public trust resources" (p.3). The Option A Plan provides helpful information including Table 5 (Inventory, growth, harvest over time, conifer and hardwoods), but it and most of the other data in the Option A apply to the Forest as a whole. Sample yield streams for some of the silvicultural prescriptions to be used on the Forest were also helpful, but are generic in nature and don't indicate where the final outcomes will occur.

1 **Recommendation**: Include information on stand characteristics per the requirements in preparation of a Non-Industrial Management Plan. Provide harvest and growth, stand, and age class distribution tables on a management compartment basis that indicate the forest condition now and on a decadal basis.

2 **Recommendation:** CDF staff has informed me that the Option A Plan will be revised to be consistent with the Management Plan. Since the data in the Option A Plan are used as the basis for projecting Long Term Sustained Yield, they should be incorporated as an Appendix to the Plan or EIR.

2) Forest Cover and Wildlife Habitat: In the past, JDSF has used the WHR classification system and has created a map of WHRs for the forest. The Draft Plan recognizes the problems associated with the WHR system and, as a result, JDSF has created its own Forest Cover Types, which are more applicable to present stand conditions. Although there is a map of Forest Vegetation (Figure 7) in the Draft Plan, it does not specifically identify areas containing JDSF Size Class 6 or 6M, which have the most likelihood of having late seral forest characteristics.

3 **Recommendation**: Develop maps of JDSF Forest Cover Types today, 10 years, 50 years, and 100 years. This will add critical information for future forest managers and help the public to understand the "big picture" envisioned in the Draft Plan. The maps should illustrate changes in habitat connectivity throughout the Forest. Note that the current scale of the map of Forest Vegetation is so small that it is very difficult to interpret. Maps at a larger scale should be produced and made available at various public locations. This recommendation exceeds the Department of Fish and Game's recommendation for a new type map (page 5, Draft EIR, Vol 2.).

3) Watercourse and Lake Protection Zone Standards: On page 69 of the Draft EIR, the Plan states that a minimum of 240 square feet of basal area will be retained in WLPZs in Class I and II watercourses. Flexibility to allow for thinning in lesser-stocked sites to hasten late seral forest characteristics should be incorporated into the Draft Plan. While the present standards call for a no cut zone of 25' along Class I watercourses and canopy retention levels, there is no indication of the diameter distribution that managers should be trying to attain in riparian management zones.

In The Redwood Forest, Noss et al reached the conclusion that:

The greatest scientific shortcoming in the current California Forest Practices Act from the perspective of riparian and aquatic resources, is its reliance on the conceptual approach to stream buffer protections used in the CDF stream classification system.

Of particular concern is the lack of substantive protection for headwater channels feeding into Class I watercourses (pages 190-191). Similar concerns have resulted in adoption by the Arcata City Forest of watercourse standards exceeding the Forest Practice Rules. Recently, the Mendocino Redwood Company has applied standards for Class IIIs on one of its Timber Harvest Plans that exceed the Rules.

4 **Recommendation:** Provide for some flexibility in basal area retention standards to hasten late seral forest development. Define diameter distribution guidelines that comprise the basal area standard.

5 **Recommendation**: Adopt management standards for Class III watercourses that address serious concerns about preventing fine sediment migration into aquatic habitat.

6 **Recommendation:** Conduct long-term paired watershed studies in which the standards recommended for WLPZ protection submitted by NFMS to the Board of Forestry (December 1999) are applied versus the standards proposed in the Draft Plan. This research would provide a scientific basis for the determination of the adequacy of riparian area management zones.

4) Snag Retention and Recruitment: Pages 16 and 62 of the Draft Plan discuss snag retention and recruitment, recognizing the deficiency of snags in "special wildlife concern areas." The Plan defines goals for recruitment, however, there is no explicit statement discussing how snags will be recruited, e.g., through green tree retention.

Forest managers and wildlife biologists go back and forth over the issue of how many snags need to be retained to provide wildlife habitat for species inhabiting the coastal redwoods. How were the goals for snag retention determined for the Plan? Is "at least one snag per acre 30" DBH" adequate throughout the Forest?"

7 **Recommendation:** Conversations with JDSF staff indicate that all snags will be left in harvest areas unless they pose a safety, fire hazard, or pose a problem for harvesting. This should be explicitly stated in the Plan. Snags that are felled for the above reasons should be left on the ground until levels of down woody debris are sufficient.

8 **Recommendation:** Snag recruitment methods should be defined.

9 **Recommendation:** Levels of snag retention and recruitment methods should be researched on the Forest in conjunction with the Department of Fish and Game. In the meantime, it would seem prudent to increase goals per the Department of Fish and Game's recommendation (page 6, Draft EIR, Vol 2.)

5) Late Seral Forest Management: The Draft Plan states on page 47 that:

Uneven-aged management will eventually produce multi-aged stands with varied levels of large trees and structural habitat elements, many of which will be characterized similarly to WHR 6 habitat as currently defined."

However, if one of the silvicultural prescriptions modeled in the Option A Plan is to be implemented, approximately 3,133 acres of stands to be managed under group selection will not have any structural retention. This represents one-third of the total of the acreage to be managed under group selection. Further, the group selection prescription identified in the Option A Plan calls for reducing a stand currently stocked with 53mbf/acre down as low as 17.7 mbf. The combination of these two factors seems to conflict with the late seral forest management goal in uneven-aged stands.

As it currently stands, the Plan does not provide enough information to determine how the above stated goal will be met and on what scale.

Late successional/seral forest development of the various management alternatives is analyzed by Dr. Dale Thornburgh in the Draft EIR (Appendix 8A-26 thru 8A-37).

Letter to Chris Rowney
July 16, 2002

Page 7

Again, confirmation of this statement needs to be made via the provision of more data on a management compartment basis.

On page 12 of the Option A Plan, the following statement is made:

One of the Board of Forestry and Fire Protection polices for State Forests is to maximize the mean annual increment of high quality forest products.... On most sites, redwood does not appear to have a point of culmination of mean annual increment (CMAI) within a 100-year rotation age,... Most redwood stands are of mixed species composition, containing varying proportions of Douglas-fir, a species which does not exhibit a well-defined CMAI rotation in most cases. The practical interpretation of this policy directive has been to set even-aged rotations to at least 80 years on all site classes.

The Draft Plan, however, states that on the West End of the Forest, rotation ages of 60 – 90 years of age will be applied (page 54).

15 **Recommendation:** The Plan should clearly state the rationale for conducting even-aged management with a rotation of 60 years and why the change from the original minimum of 80 years occurred.

8) JDSF Budget and Staffing

Recommendation:

- Based on a $10-15 million annual budget, it is recommended that 10% of revenues be reserved specifically for JDSF-based research, demonstration, educational, and acquisition programs, and to hire a wildlife biologist.
- 16 The Plan should call for an annual financial report to be made available to the public. Further, a report should be made yearly on the expenditure of JDSF timber revenues for such programs as the California Forest Improvement Program (CFIP). In this way, both managers and the public will be able to see the level of investment in the Forest on a programmatic basis and where overall revenues are expended.

I would also like to take this opportunity to thank the JDSF staff for providing information to me. Marc Jameson, Bill Baxter, and Craig Pederson helped me to better understand the management objectives and practices proposed in the Draft Plan and EIR.

Sincerely,

Roger Sternberg

Roger Sternberg
RPF #2620

Dr. Thornburgh's assessment of Alternative C (JDSF Draft Plan), is that in 100 years and after 4 cutting cycles, stands that are currently 40-60 years old will "be progressing towards optimum conditions that are found in late successional forests." It is unclear whether Dr. Thornburgh's analysis applies to JDSF's uneven-aged management areas or to the late seral management areas identified in the Draft Plan.

10 **Recommendation:** The Plan should map second growth forests containing late seral forest characteristics using the JDSF Vegetation Type system and identify the impacts over time of proposed harvests on a management compartment and on a landscape basis. Information should also be provided on the specific effect of the Plan on older second growth forests (80-100 years).

11 **Recommendation:** The Plan should clarify whether Dr. Thornburgh's analysis applies to uneven-aged management areas in general or only to specific late seral management areas. If the latter is the case, then it would be very helpful to have Dr. Thornburgh comment on the proposed uneven-aged management silviculture in the Draft Plan and how well it will produce multi-aged stands with WHR 6 habitat characteristics referred to above.

12 **Recommendation:** Designate Late Seral Management for inner gorge areas (2,012 acres) to increase level of protection for riparian and aquatic resources

6) Old Growth Forest and Old Growth Trees: There appear to be as many definitions of old growth forests as there are forest ecologists. This lack of clarity shouldn't, however, preclude JDSF from selecting one. Without such a definition, limited management activities in old growth stands will not have a clear goal to attain.

The Plan specifically notes that individual old growth trees will be retained throughout the Forest (page 60), which will provide important structural diversity and provide additional wildlife habitat. However, the one criterion of a DBH greater than 48 inches seems to be questionable, particularly in relationship to Douglas-fir old growth, which tends to have smaller diameters than redwood old growth.

13 **Recommendation:** Define old growth forests. Noss et al (page 88) provide an excellent summary of the various definitions.

14 **Recommendation:** Change the diameter criterion for old growth conifers to 36 inches DBH.

7) Even-aged Management: According to CDF staff, 15% of even-aged managed stands will be in the 50-year or under age class at any one time. This information is important to note as it suggests that the even-aged management proposed in the Draft Plan should retain habitat connectivity.

Letter RS-249

Response to Comment 249.1
The level of detail presented in the DEIR, as well as the DFMP and Alternative "A," is appropriate for the program level DEIR completed for the DFMP. Please refer to Response VT-241.1 for more information relating to CEQA requirements for the level of detail that is appropriate for a program EIR. The type of information requested in the comment is more appropriate to provide on a project level analysis such as a THP or NTMP.

Providing the level of detail requested is not reasonable given the size of JDSF and the policy level direction provided in the DFMP. The management compartments currently delineated on the Forest are broad areas identified for the silvicultural allocation plan. Not all of the compartments are included in the short term harvest schedule, and it is not known at this time which compartments may be scheduled for harvest pas that time frame. Furthermore, actual harvest area boundaries, yarding methods, specific silvicultural treatments, among other details, will be determined after site specific evaluation by resource professionals. Presenting specific information at the management compartment level would not provide for a more meaningful analysis of the proposed project due to these uncertainties. Further segregation into smaller compartments would be highly speculative at this time.

Response to Comment 249.2
Section 15148 of the CEQA Guidelines suggests that documents such as the Alternative "A" document should be cited but not included in an EIR.

Response to Comment 249.3
In the wildlife section of the DEIR, there is a discussion of the WHR types available across JDSF for each of the species addressed. The discussion of available WHR types is based on conversion of JDSF vegetation types to WHR types as discussed in Appendix 8. This conversion or "crosswalk" process resulted in an acceptable level of detail for forest wide discussions of WHR habitat, but not for site specific or project level analysis. Also, JDSF does not have a harvest schedule past the 5-year schedule that would support long-term WHR projection modeling. This type of analysis would be highly speculative and would not provide meaningful results.

Response to Comment 249.4
The DEIR reviewed the project as proposed in the DFMP. The DFMP included the 240 sq. ft. per acre basal area standard. This standard is based on the experience and professional judgment of JDSF staff and is supported as an appropriate standard in the DEIR. It is a conservative standard that will allow some flexibility in managing the more densely stocked riparian zones, and limit operations in less densely stocked riparian zones. Defining a diameter distribution beyond retaining the 10 largest trees would limit the flexibility of WLPZ management.

Response to Comment 249.5
The geology and hydrology sections of the DEIR indicate that the road system is the most significant contributor of sediment into the aquatic system on JDSF. The DFMP provides for a Road Management Plan to reduce and minimize road related sediment delivery. Class III protection standards presented in the DFMP are consistent with the FPRs, and are the minimum standards that will be followed. Site specific review during the THP preparation and review process will allow for development of additional class III protection measures if needed.

Response to Comment 249.6
Please refer to General Response 1.

Response to Comment 249.7
A mitigation measure was included in the DEIR to address snag retention. The decision to remove or leave snags that are felled will be made the project level.

Response to Comment 249.8 and 249.9
Please refer to General Response 1.

Response to Comment 249.10
Please refer to response 1 of these comments. Also, the DFMP and DEIR are explicit on the management of second-growth stands. A detailed silvicultural allocation plan is provided and analyzed. The second growth stands will be managed to achieve the desired future conditions as described in the DFMP.

Response to Comment 249.11
Dr. Thornburgh's analysis applies to the uneven-aged areas in general.

Response to Comment 249.12
Please refer to General Response 1. Inner gorge areas would nearly always overlap with WLPZ late seral management areas.

Response to Comment 249.13
Old-growth groves and aggregations are defined in the DFMP as are old growth trees. The definitions were detailed enough to allow review of potential impacts in the DEIR.

Response to Comment 249.14
Please refer to General Response 1.

Response to Comment 249.15
A rotation age of 60 years is consistent with the FPRs for site II and III lands. As stated in the timber section of the DEIR, the Option A document will be updated to more clearly reflect the final management plan, which includes the 60 year rotation rather than the 80 year minimum.

Response to Comment 249.16
Please refer to General Response 1. JDSF budget and staffing are outside the consideration on the EIR.

PH-250

Patrick Higgins
Consulting Fisheries Biologist
791 Eighth Street, Suite N
Arcata, CA. 95521

RECEIVED
JUL 18 2002

Mr. Chris Rowney
California Department of Forestry
P.O. Box 944246
Sacramento, CA 94244-2460

Dear Mr. Rowney,

I am commenting on the *Jackson Demonstration State Forest Management Plan* (JDSF Plan) and the associated *Environmental Impact Statement* (EIS). I am a consulting fisheries biologist with extensive knowledge of the watersheds surrounding Jackson Demonstration State Forest (JDSF), having recently completed a project on the Noyo and Ten Mile rivers for the California Department of Forestry (CDF). These CD and Internet compendiums of information are known as KRIS projects. The acronym, KRIS, refers to the software system, the Klamath Resource Information System. Under the same contract with CDF, we are currently in the final stages of completing KRIS Big River. Much of the data displayed below to support arguments regarding the JDSF Plan come from these projects. Full projects on the web can be viewed at www.krisweb.com. I have included KRIS Noyo, KRIS Ten Mile and KRIS Big River Draft CD's to provide the full data and context for all three basins. Contents of these projects should help you to revise the JDSF Plan and achieve its adaptive management goals.

My comments will focus on fisheries issues, particularly the inadequacy of endangered species and status information for coho salmon (Oncorhynchus kisutch) and steelhead trout (O. mykiss). I helped write a status review of Pacific salmon species several years ago for northwestern California on behalf of the American Fisheries Society (Higgins et al., 1992). I am also commenting on sediment yield, roads, water temperature and riparian conditions, sensitive amphibians, restoration, timber harvest and cumulative watershed effects are also offered. The JDSF Plan and associated EIR are fundamentally flawed according CEQA standards for addressing threatened and endangered salmonids, cumulative effects and several other of the subjects discussed herein. I reference and cite from a number of documents that were not used in the Plan. These documents are also available on companion KRIS CD's I am submitting.

The Status of Coho Salmon and Steelhead Not Properly Addressed

1 The JDSF Plan and EIS does not offer credible information about the status of coho salmon and steelhead in and around JDSF. The Plan and EIS state that "Overall, based on out-migrant trapping data it appears that salmonid habitat in the planning watersheds is near current carrying capacity." Downstream migrant trapping data come from some of the better streams in the Forest and are not representative of all JDSF streams. Recent

fisheries and habitat typing data available for JDSF and the surrounding Big River, Noyo River and coastal basins show that most fish communities are dominated by steelhead and habitat conditions are extremely poor for salmonid spawning and that rearing in privately held watersheds and only fair on JDSF (CDFG, 1995-1999; Georgia Pacific, 1994-1998).

Coho Salmon: The JDSF Plan EIS makes the following statement about the status of coho:

> "Fish populations can be extirpated from watercourses and watersheds if conditions degrade to a point the stocks are no longer self-sustainable. However, nearly two-thirds of the entire land base within the JDSF was clear-cut and burned prior to the introduction of the modern FPRs. Historic activities included massive broadcast burning, road construction and log skidding in watercourses, splash damming, stream clearing, and complete removal of riparian canopy. No effort was made to protect fish stocks at that time and populations did suffer.....This indicates fish populations were able to maintain viability, albeit at low numbers, through that unregulated logging period. The potential effects to fish populations and aquatic communities from each alternative are significantly less than pre-modern FPR operations."

This cavalier attitude toward maintaining coho salmon in the Forest sums up the "benign neglect" attitude of JDSF toward coho recovery. This discussion fails to note the extensive current logging damage, or almost homogeneous disturbance on other lands surrounding JDSF and regionally. If coho were lost from the JDSF in earlier periods, there would have been sources of coho colonists from nearby watersheds to replenish it once the streams recovered. Today, the JDSF fish represent the most significant gene resources within hundreds of miles which, if lost, would confound coho recovery. This means that mis-management of JDSF could in fact cause not just a Taking, but Jeopardy, to coho salmon under the Federal Endangered Species Act.

Higgins et al. (1992) noted the Noyo and Big River coho salmon populations as "stocks of concern" based on declining freshwater habitat conditions. Brown et al. (1994) in *Historical Decline and Current Status of Coho Salmon in California* clearly indicated that California coho salmon were in need of protection under the Endangered Species Act. They noted that one of the last of seven adult coho populations in the hundreds was in the Noyo River (Figure 1).

The remaining coho salmon populations that number in the hundreds are critical to conservation and restoration of the species because they represent the last significant gene resources. These populations provide a source of colonists for streams that are currently damaged as they recover in the future. The current population centers, according to Brown et al. (1994), are several hundred miles from one another (Figure 1). The distance between healthy donor stocks makes natural recovery of coho up and down the California coast unlikely. Artificial culture could be used to supplement natural replenishment mechanisms in restored watersheds. However, even hatchery-based

recovery requires healthy donor stocks with sufficient numbers of individuals so that egg taking would not jeopardize the population of origin.

The National Marine Fisheries Service (NMFS, 2001) *Status Review Update for Coho Salmon (Oncorhynchus kisutch) from the Central California Coast and the California portion of the Southern Oregon/Northern California Coasts Evolutionarily Significant Unit* found that:

> "The Central California Coast ESU is presently in danger of extinction. The condition of coho salmon populations in this ESU is worse than indicated by previous reviews."

The recently released California Department of Fish and Game (CDFG, 2002) *Status Review of Coho Salmon North of San Francisco* characterized the coho meta population including the JDSF area as follows:

> "Extant populations in this region appear to be small. Small population size along with large-scale fragmentation and collapse of range observed in data for this area indicate that metapopulation structure may be severely compromised and remaining populations may face greatly increased threats of extinction because of it. For this reason, the Department concludes that coho salmon in the Central Coast Coho ESU are in serious danger of extinction throughout all or a significant portion of their range."

2 The JDSF Plan does not address or acknowledge the conditions described in these reviews. Nor does the plan use information in the KRIS Noyo that shows a major decline of coho salmon in the basin between the 1960's and the 1990's. The KRIS project used historical memos from CDFG indicating coho distribution and relative abundance and compared them to more recently collected fisheries data. The results of these comparisons are shown as Figures 2 and 3 below. In the 1960's, coho salmon dominated many of the tributaries of the Noyo River watershed (Figure 2), including the eastern portion of the watershed, except in reaches with steep gradient where steelhead were more numerous. By the 1990's, eastern Noyo sub-basins lacked coho or retained them at remnant levels by the 1990's (Figure 3), while the western Noyo watershed tributaries were dominated by steelhead, with coho still present but sub-dominant. The exception is Bear Gulch in JDSF, which was still dominated by coho, according to the most recent electrofishing samples.

The KRIS Big River project, which includes small coastal streams flowing from JDSF, shows that coho salmon are at similarly low levels in the Big River basin (Figure 4).. According to the last fisheries surveys available for Caspar and Hare creeks and Russian Gulch, are some of the last local streams that are still dominated by coho salmon. All three are on JDSF.

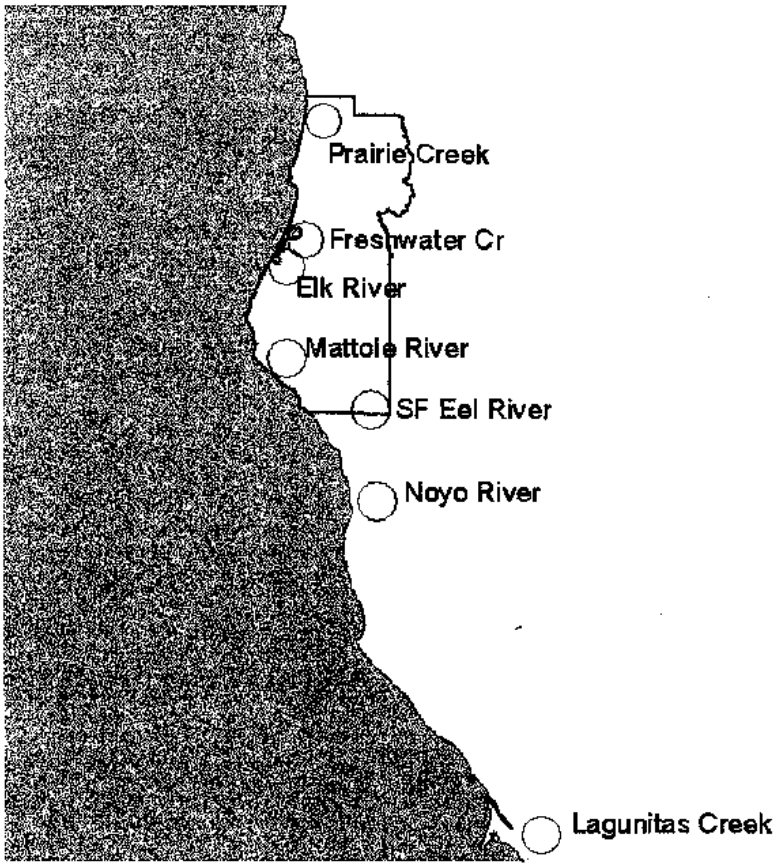

Figure 1. The map above shows the last populations of coho salmon in the hundreds in all of northwestern California, according Brown et al. (1994), one of which is the Noyo River population. If these last populations are lost, then the coho recovery will not be possible.

4

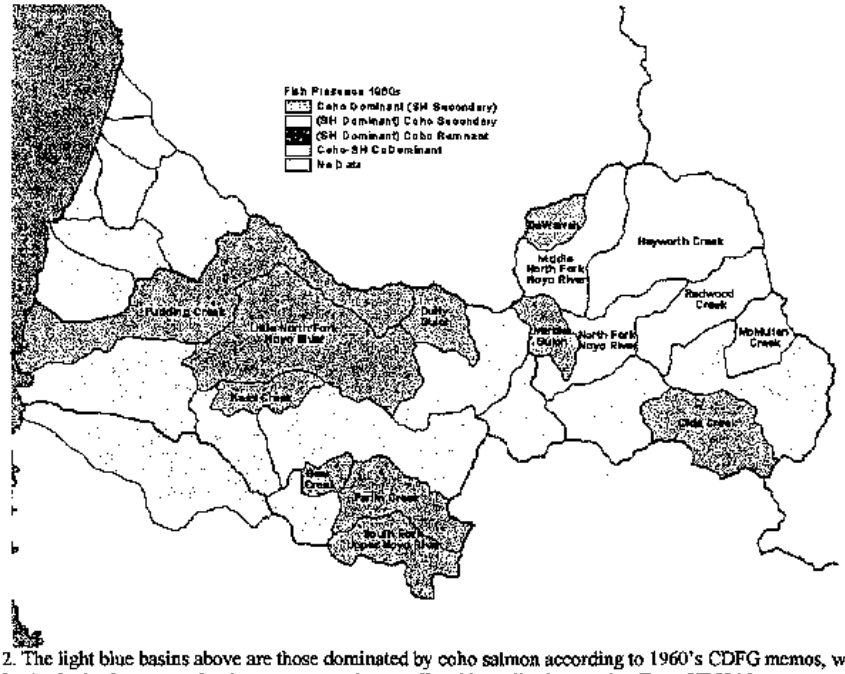

Figure 2. The light blue basins above are those dominated by coho salmon according to 1960's CDFG memos, while yellow basins had coho present but less numerous than steelhead juveniles in samples. From KRIS Noyo.

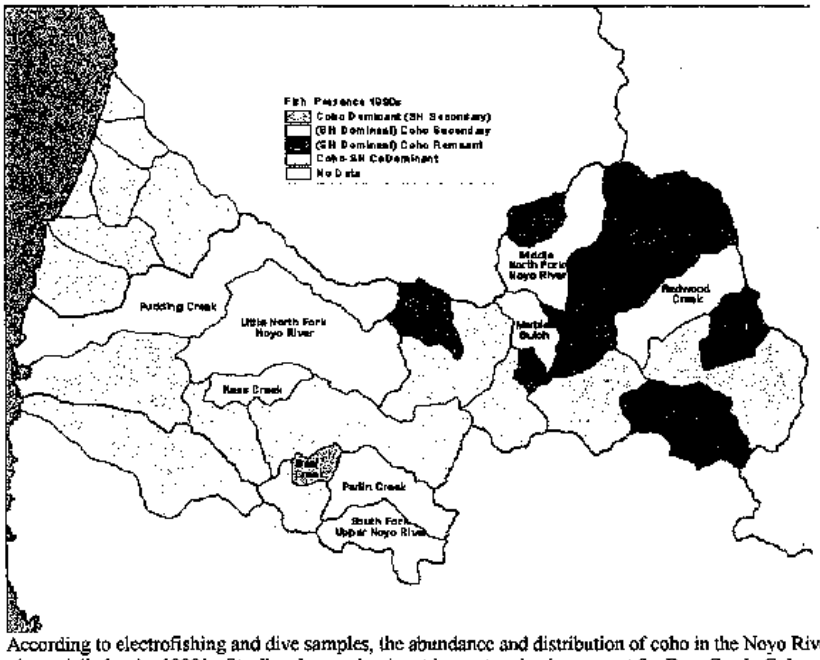

Figure 3. According to electrofishing and dive samples, the abundance and distribution of coho in the Noyo River changed substantially by the 1990's. Steelhead were dominant in western basins, except for Bear Creek. Coho were remnant or absent in the east and have decreased or disappeared in much of the Noyo Basin.

3 The review of Burns (1972) and Valentine and Jamison (1994) in the JDSF Plan and EIS failed to note that the fish community structure of the Little North Fork Noyo River has shifted. When sampled by Burns from 1966-1968, it was dominated by coho salmon. When sampled in the 1990's (Valentine and Jamison, 1994), the Little North Fork was dominated by steelhead (Figure 5). The change in fish community structure followed intensive logging (>80%) from 1985-2000. Manning (1999) found that the Little North Fork Noyo had the lowest productivity of the eight northwestern California coho salmon streams he was monitoring with downstream migrant traps. He also found it the lowest in production of coho juveniles, when ranked against the entire universe of streams Pacific Northwest wide for which he had data. The population shift in the Little North Fork is similar to that found by Reeves et al. (1992) on the Oregon coast, where watersheds logged in over 25% of their area tended to loose salmonid species diversity (see Cumulative Effects discussions below).

Stocks of coho are also plummeting in adjacent watersheds in response to intensive land use. NMFS (2001) noted that coho were absent from 80% of tributaries to the Ten Mile River that formerly harbored them, with particular decline noted in the South Fork Ten Mile River. The Ten Mile River is adjacent to the Noyo River watershed to the north and east. The SF Ten Mile sub-basin was harvested in 76% of its watershed area between 1990 and 1999 and road densities increased to 5-10 miles per square mile (GMA, 2000). The decline of the coho in the Ten Mile River is troubling because the NMFS *Coho Status Review* (Weitcamp et al., 1996) regarded it as an important wild population, without history of hatchery introduction. Brown and Moyle (1991) noted that many smaller Mendocino coastal streams had also lost coho.

Rieman et al. (1993) point out that: "When habitat disruption is spread among all populations, all populations are more likely to decline during unfavorable periods in the regional environment (for example, drought). Severe or prolonged conditions increase the potential for regional extinction." Coho salmon populations in watersheds surrounding JDSF face high risk of loss due to unstable watershed conditions. Jackson Demonstration State Forest has some of the last patches of viable coho salmon habitat on the entire Mendocino Coast and constitutes a refugia (Bradbury et al. (1996). It is of the utmost importance for regional recovery of coho that priority be given to erosion control and that no further damage to aquatic habitat take place, especially before other watershed areas have had a chance to recover (see Restoration).

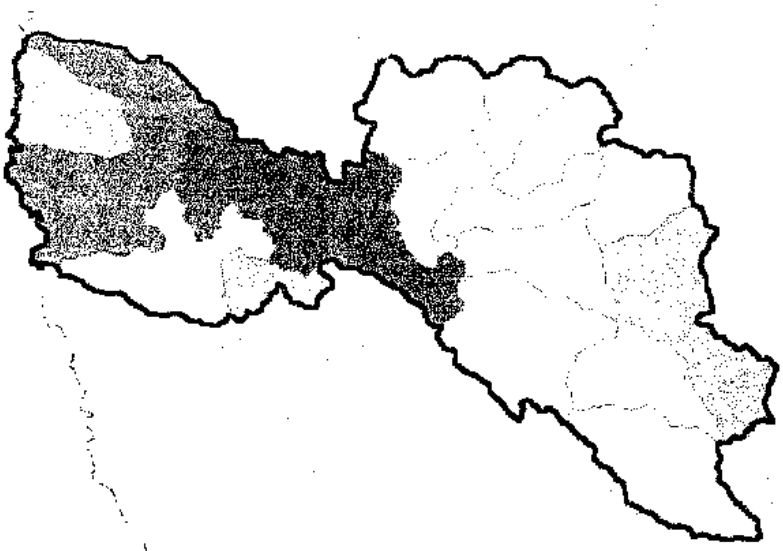

Figure 4. The map above from the KRIS Big River project shows basins where coho are still dominant in light blue, where they are co-dominant with steelhead as dark green, present but less numerous than steelhead in light green and remnant or absent in yellow. This map shows the extremely poor condition of coho salmon population in the Big River and the high importance of JDSF coastal tributaries.

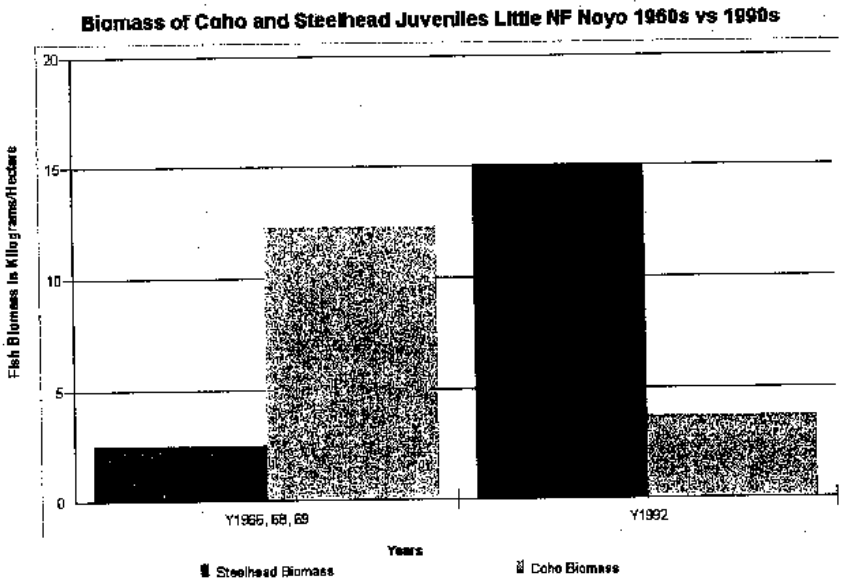

Figure 5. Comparison between electrofishing by Burns (1972) in 1966-68 and by Valentine and Jamison (1994) in 1992 show that the Little North Fork switched from a coho dominated ecosystem to one dominated by steehead. Chart from KRIS Noyo.

7

CDFG (2000) noted significant problems for coho salmon spawner access in South Fork Noyo River tributaries during low flow conditions caused by the Noyo Egg Collecting Station (ECS) weir and other impediments. "The coho salmon that did make it past the station were then blocked from passage by the water collection facilities (summer dams) on Parlin Creek and on the South Fork Noyo River at the Parlin Camp" (CDFG, 2000). The situation with summer dams and water extraction should get attention in the JDSF Plan. 4

Steelhead: The California Department of Fish and Game has a Steelhead Program with an office in Fort Bragg and studies have been carried out for the Noyo River during the last several years. None of this information appears in the references of the JDSF Plan. 5 Gallagher at al. (2000) have noted that steelhead carrying capacity in the Noyo River basin has been greatly diminished, with the adult population estimated as 300-400 fish. This is down an order of magnitude from former estimates (Taylor, 1978), when approximately 6000 adult steelhead returned to the Noyo River. The extremely low return of adult steelhead suggests serious problems with freshwater habitat in the Noyo River watershed. The alteration of freshwater habitat has likely restricted survival of older age steelhead juveniles, which are the most likely to recruit into the adult population (see below).

6 Coho and Steelhead Habitat Suitability: The JDSF Plan does not properly use or reference available habitat typing data showing that habitat suitability is limited in Noyo tributaries on private land and less than optimal in JDSF (CDFG, 1995-1999; Georgia 7 Pacific 1994-1996). Although the JDSF Plan refers to Knopp (1993), it fails to acknowledge the significance of that report, particularly with regard to local conditions 8 on private land and JDSF and the implications for fish habitat. Water temperatures also exceed suitable levels for coho salmon in some areas of JDSF and the potential linkage to riparian management is not reflected in the JDSF Plan.

Murphy et al. (1984) found that natural pool frequencies in unmanaged streams ranged between 39-67%. Many streams on private lands in the Noyo Basin have pool frequencies less than 20% (Figure 6). JDSF streams have a higher pool frequencies, showing more advanced recovery but still less than optimal conditions (Figure 7). I have personally walked the North Fork South Fork Noyo and Brandon Gulch and found long reaches of bedrock channel, little large wood, and a lack of spawning gravels. This stream has sufficiently cool temperatures to harbor coho salmon, but insufficient habitat complexity (see Restoration). CDFG (2000) also found this reach to have little spawning activity.

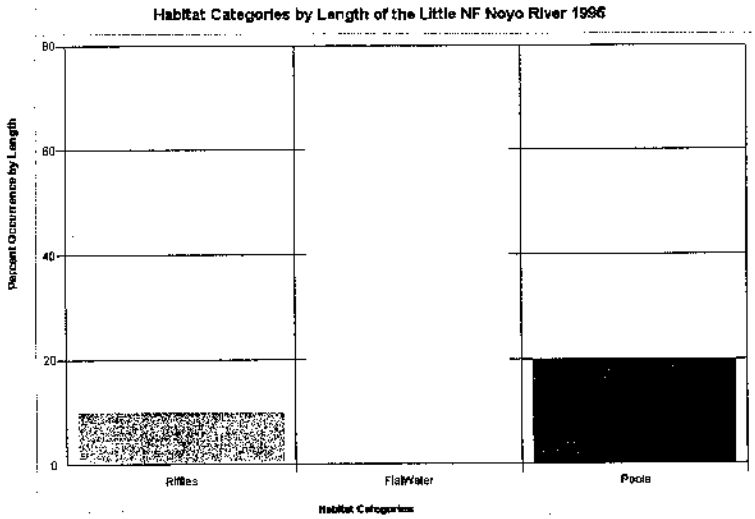

Figure 6. This chart shows the frequency by length of habitat categories for the Little North Fork Noyo River. Pools constituted only 20% of habitats, which is indicative of recent pool filling due to intensive land use management.

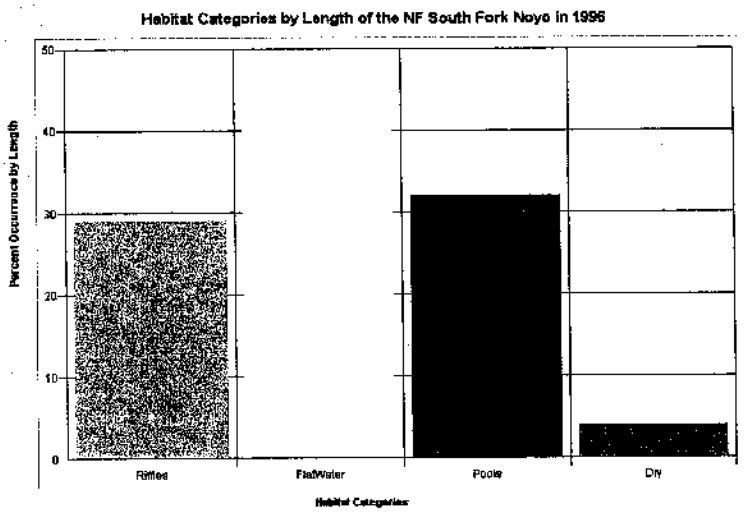

Figure 7. The habitat frequency chart from the North Fork SF Noyo within JDSF shows recovery from past activities but pool frequency is still below optimal. The dry stream segment suggests some remaining problems with aggradation.

9

Brown et al. (1994) stated that coho needed pools over a meter (39") in depth and Reeves (1989) found that steelhead need pools three feet in depth to support rearing of yearling and older juvenile steelhead. In smaller Noyo and Big River tributaries there are few pools greater than three feet in depth (CDFG, 1995-1999; GP, 1994-1996), while larger tributaries with greater depth exceed optimal water temperatures. JDSF has both superior pool frequency and depth compared to other tributaries on private lands.

9 While the JDSF Plan and EIS mention the volume of sediment in pools, known as V*, the significance of the results of the Knopp (1993) study are not properly discussed. Knopp (1993) found that intensively managed watersheds had significantly higher V* values than those with no history of management or ones with 40-50 years of watershed rest. V* is the ratio of sediment to the volume of sediment and water in a pool, and is roughly equal to the percentage of a pool filled with sediment. Pools in heavily managed watersheds sometimes exceeded 0.40 (or 40% filled), while intact or recovered watersheds had V* scores of 0.21 (21% filled). Results from Knopp (1993) show that streams on industrial timber lands have pools that are filled in and that JDSF streams are more advanced in recovery from past logging damage (Figure 8). Data on pool frequency and depth as well as the amount of sediment in pools indicate that JDSF streams are refugia, when compared to the current conditions of streams in Mendocino County.

Welsh et al. (2000) measured water temperatures in streams in the Mattole watershed and found that coho were absent when water temperatures exceeded 16.8 C (62.3 F) maximum floating weekly average, which he termed MWAT. Hines and Ambrose (1998) also found a similar response by coho salmon to water temperature in Mendocino County watersheds, including the Noyo and Big rivers. While the JDSF Plan and EIS do take
10 note of voluminous water temperature data available for the Forest, they do not mention that some JDSF managed streams are too hot for coho in some years.

In 1996 and 1998, Parlin Creek was within the temperature range recognized to support coho, but it exceeded the reference of 16.8 C maximum floating weekly average in 1997 (Figure 9). This indicates that riparian retention and steps to advance thermal recovery in this stream should be a priority. Figure 10 shows South Fork Noyo River temperatures in 1997 and references optimal growth for salmonids (Armor, 1990), which is 10-15 degrees C (50-61 F). When minimum temperatures exceed optimal growth and enter stressful ranges, the MWAT has risen above 16.8 C and the stream is too warm for coho. The mainstem South Fork formerly harbored coho juveniles and should do so in the future. This should be a permanent monitoring location for adaptive management to see if temperatures decline as JDSF management progresses (see Monitoring and Adaptive Management).

11 The JDSF Plan fails to note widespread problems with elevated water temperatures throughout the Noyo and Big River basins, where most mainstem sites are too warm to support coho salmon juveniles or for steelhead growth and survival (KRIS Noyo and KRIS Big River Draft). The preponderance of cool water temperatures at JDSF sites, given the condition of streams on private land, is another supporting argument for JDSF as a refugia.

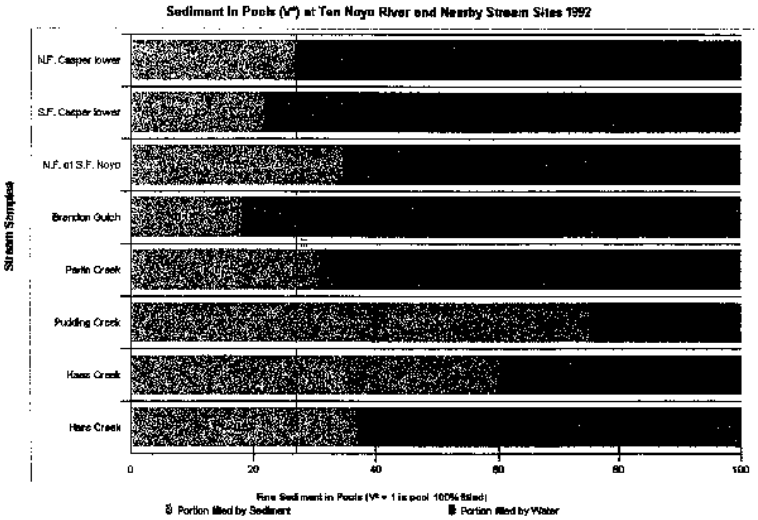

Figure 8. The V* data from Knopp (1993) above indicates that JDSF streams are in recovery from past logging damage while the streams on industrial timberland (i.e. Kass or Pudding creeks) are more filled in.

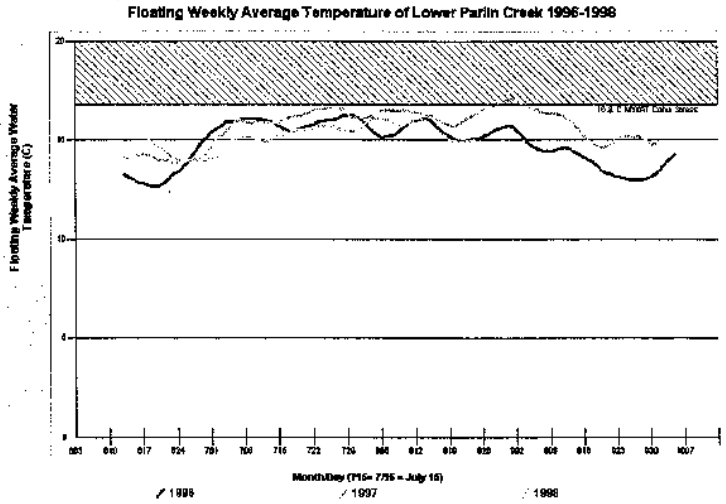

Figure 9. The floating weekly average water temperature of lower Parlin Creek exceeded the suitable range for coho salmon briefly in 1997. Although this reach is suitable in most years for coho, JDSF should try helping advance recovery to make it optimal in all years and help buffer warm stream temperatures in the lower South Fork Noyo on the Forest.

Riparian Conditions

The JDSF Plan refers to canopy instead of discussing riparian health and function (Chen, 1991). Science associated with the Northwest Forest Plan (FEMAT, 1993) indicates that the zone of riparian influence is two site potential tree heights or more (Figure 11). In fact water temperature buffering, in the form of cool air temperatures and high humidity over the stream, rapidly deteriorates under one site potential tree height protection, which in redwood country is 200 feet or more (Spence et al. (1996). Consequently, the riparian buffers and management plans are fundamentally flawed. The JDSF Plan ignores best science on this issue to continues to promote harvest of large trees in riparian zones. 12

It is very surprising that the JDSF Plan did not use the study of the Noyo, Big River and smaller coastal tributaries in JDSF carried out by the Forest and Resource Assessment Program (FRAP) division of CDF (Keithley, 1999). Keithley (1999) used trees 24" in diameter to represent conifers that could provide lasting large wood and channel forming processes, if contributed to streams. He found that in the study area "Overall, the riparian forests were shown to be dominated by younger seral stage trees". Consequently, potential large wood recruitment and other riparian functions are impaired in most of the watersheds surrounding JDSF, with conditions in the Forest representing the best conditions (Figure 12). This graphic again depicts why JDSF should be formally recognized as a refugia and management emphasis shifted to protect and restore riparian zones and adjacent streams to conditions that are optimal for coho salmon, steelhead trout and other sensitive aquatic species.

Data show that some reaches of JDSF streams sometimes exceed water temperatures suitable for coho salmon. More studies should be done to enhance understanding of the relationships between water temperature and riparian conditions before extensive harvests take place (see Monitoring and Adaptive Management). Protections offered in the JDSF Plan for riparian zones are currently those offered under the California Forest Practice Rules. Given the recent recognition that these rules do not protect salmon and steelhead (Ligon et al., 1999), the proposed silvicultural methods are not appropriate. Ephemeral streams (Class III) are one of the most important places in the stream system for supply of large wood and ground water and can be a major source of sediment if disturbed (PWA, 1999). There should be no harvest within one site potential tree height of Class III streams unless it is full suspension cable operations which would release existing larger conifers to accelerate recovery of the riparian to late seral conditions. Class I and Class II streams should be afforded protection to two site potential tree heights or 400 feet on both sides of the stream according to needs described in FEMAT (1993). 13

Sediment Impacts in the Noyo and Big River Basins and JDSF Management

The JDSF Plan fails to properly acknowledge of the impairment of the Noyo and Big rivers with regard to sediment. The U.S. Environmental Protection Agency (EPA) Total Maximum Daily Load (TMDL) reports for the Noyo and Big River (EPA 1999, 2001), are not acknowledged or referenced by the JDSF Plan. 14

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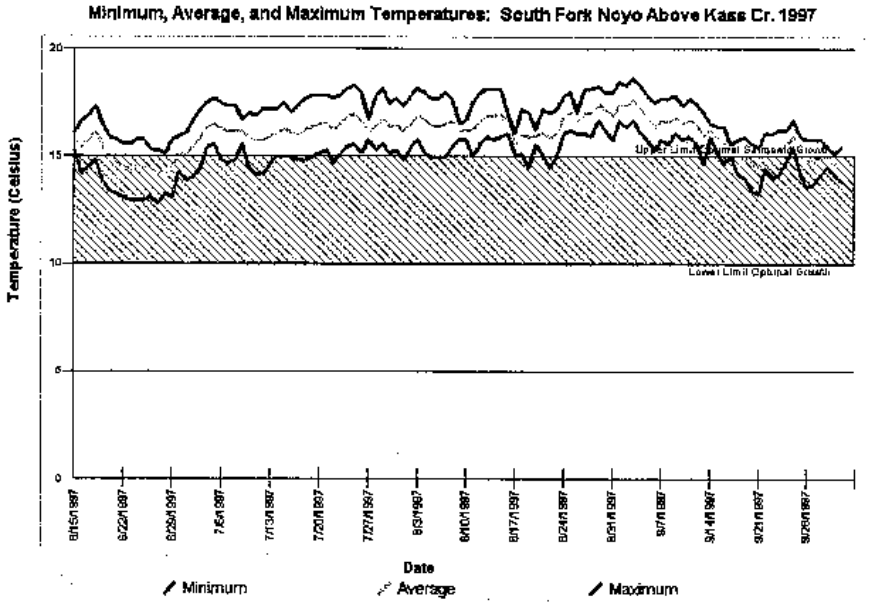

Figure 10. The minimum South Fork Noyo River temperature often exceeded the salmonid optimal growth range in 1997 and would have been too warm at this location to rear coho salmon.

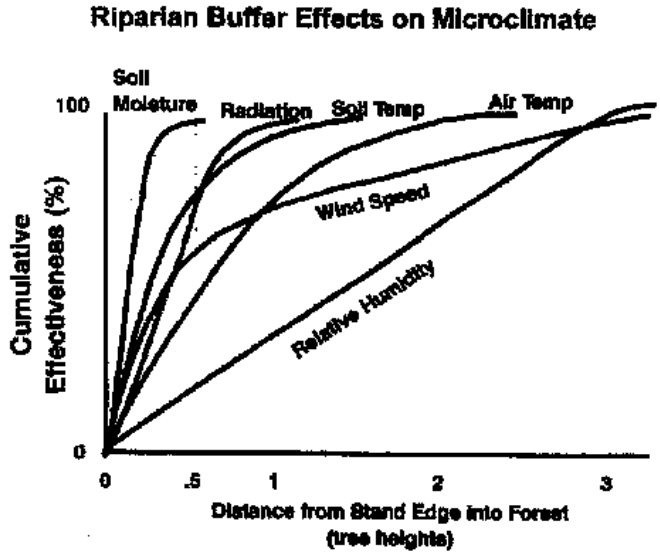

Figure 11. This figure taken from Chen (1991) shows how various riparian functions important to streams deteriorate as disturbance encroaches into stream side areas. One site potential tree height is at least 200' in redwood forests (Spence et al., 1996).

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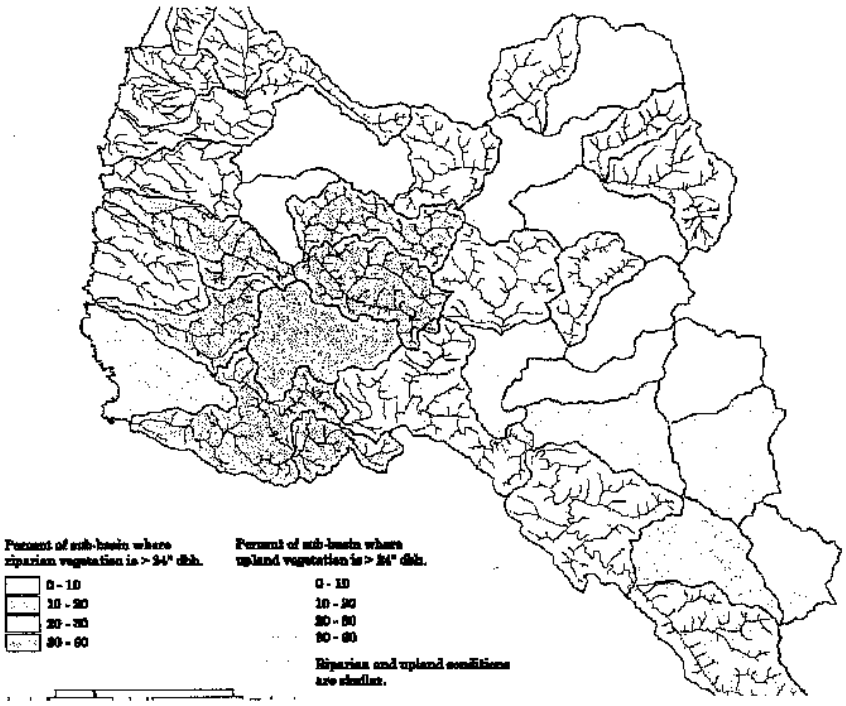

Figure 12. The above map taken from Keithley (1999) shows that JDSF has the only functional riparian zones for salmonid suitability in the entire Big River, Noyo River and adjacent small coastal tributaries. This shows widespread depletion of riparian zones off JDSF that will not recover to desired future condition for salmonid habitat for 60-100 years.

14

15 Excellent reports are available regarding sediment budget and erosion sources related to the TMDL in both basins (Graham Matthews and Associates, 1999 and 2001). The JDSF Plan did not use the best available scientific information for assessment of sediment problems and cumulative watershed effects.

It is good to see that JDSF plans to abandon 50-100 miles of road during the next five to ten years to decrease sediment yields. We hope that this means the roads will be decommissioned with crossings pulled, road beds ripped and seeded, inboard ditches filled and all hanging fill pulled back from the roads edge. The Plan does not address recommendations in Cedarholm et al. (1983) and NMFS (1996) that maximum road densities should not exceed 2.5 miles per square mile in order to maintain properly functioning watershed condition. Graham Matthews and Associates (1999) found road densities of 6.67 miles per square mile in the Noyo River watershed with some sub-basins like the Little North Fork as high as 10 mi/sq mi (Figure 13). No roads should be constructed in streamside locations and all existing roads in these locations should be removed or measures taken to completely mitigate surface erosion problems. See discussions below (Restoration) on road decommissioning prioritization and coho recovery on JDSF.

Timber Harvest

16 The JDSF Plan is insufficient with regard to discussions of timber harvest. There is no mention of prudent limits to logging for maintaining fish habitat diversity and salmonid species diversity. Reeves et al. (1992) studied the last eight basins on the Oregon Coast that were less than 25% timber harvested and compared them to adjacent watersheds with higher timber harvest levels. They found that streams draining watersheds cut in over 25% of their area were usually dominated by one salmonid species, while basins with less disturbance maintained several species. Reeves et al. (1992) traced the root cause to channel simplification associated with pools filling in and large wood depletion. The lack of recognition of limits to timber harvest in California Forest Practice Rules was identified as a major problem for protection of anadromous fish resources by two recent major studies (Ligon et al., 1999; Dunne et al., 2001). The use of FPR rules as sufficient for protection of coho and steelhead in the JDSF Plan ignores these studies.

Timber harvesting has been extensive in recent periods and is recognized as contributing sediment to the Noyo and Big rivers (GMA, 1999 and 2000). The rate of timber harvest increased substantially since 1985 in the Noyo River, when compared with periods for the last 70 years (Figure 14). The Noyo River basin has undergone extensive timber harvest, according to CDF's own data, between 1986 and 1999 with some sub-basins more than 80% harvested in this period (Figure 15). The extensive timber removal adjacent to JDSF is also evident in the Big River basin, with extensive clearcut logging in areas just to the south of the Forest (Figure 16).

The EPA Land Cover data derived from 1994 Landsat imagery shows the dramatic difference between JDSF and adjacent private land holdings (Figure 17). While JDSF shows up as evergreen forest, seral stages in adjacent areas recently clearcut show up as mixed forest, hardwoods and shrubland. Change scene detection using 1994 and 1998

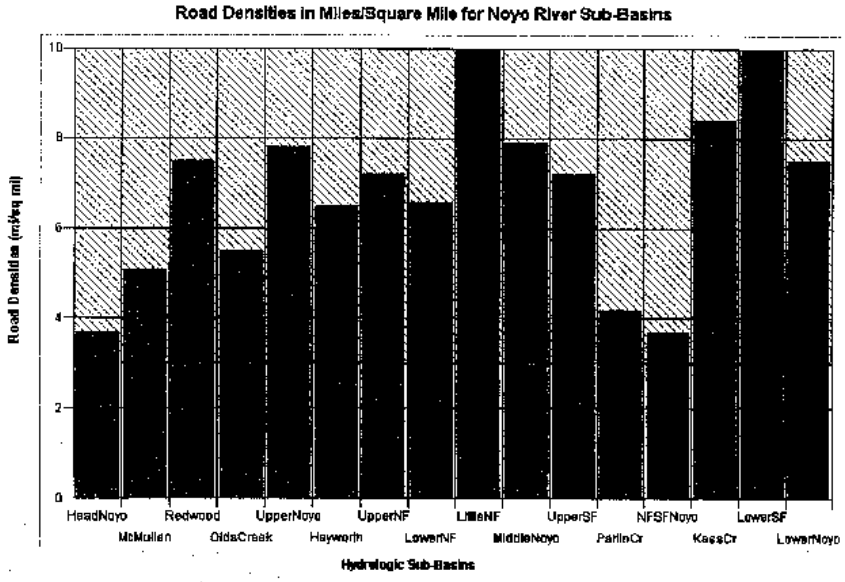

Figure 13. This chart comes from the KRIS Noyo project and shows the road densities in miles per square mile for all Noyo River sub-basins. Note that road densities on JDSF watersheds, such as Parlin Creek and NF SF Noyo, are lower than those on adjacent industrial timber land (i.e. Kass Creek).

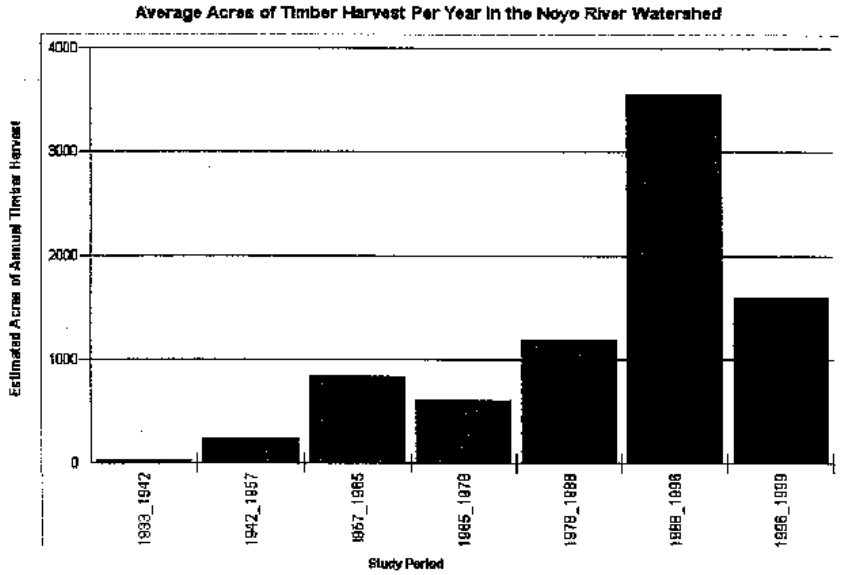

Figure 14. The chart above shows a dramatic increase in the acres timber harvested in recent decades in the Noyo River basin (GMA, 1999).

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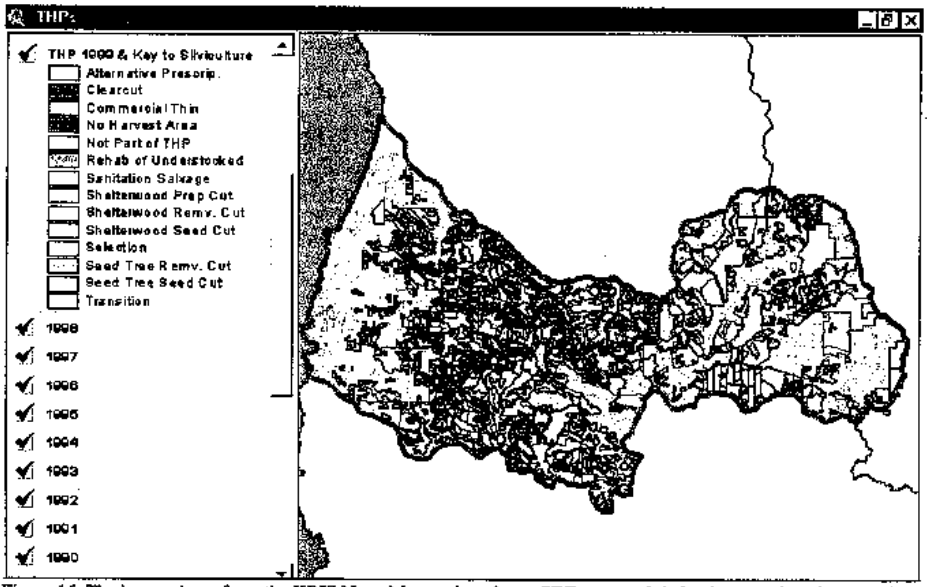

Figure 15. The image above from the KRIS Noyo Map project shows CDF approved timber harvest plans from 1986-1999 showing silvicultural methods. Not extensive clear-cutting just north of JDSF. Data from CDF Santa Rosa.

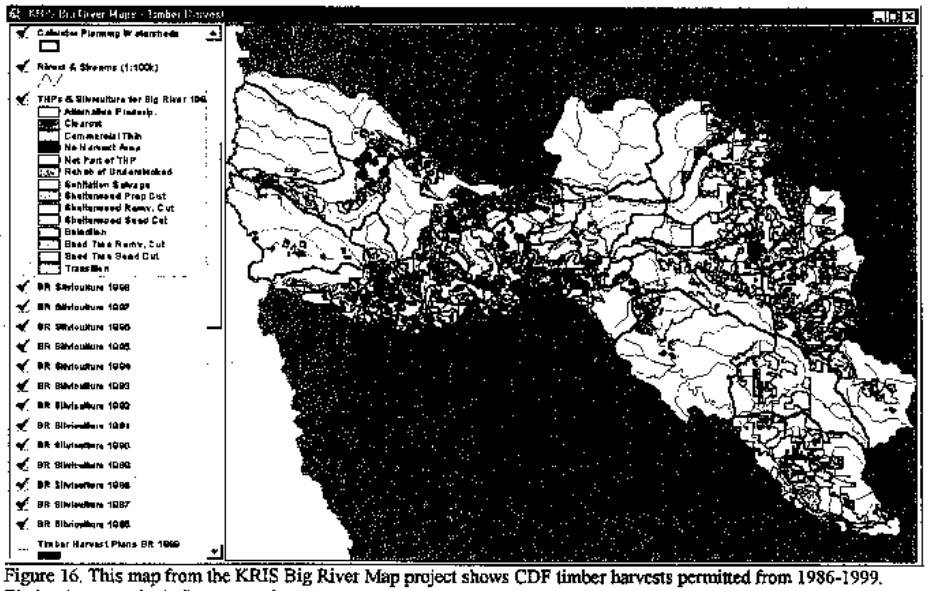

Figure 16. This map from the KRIS Big River Map project shows CDF timber harvests permitted from 1986-1999. Timber harvests, including many clearcuts, pretty cover extensive areas just south of JDSF holdings in the Big River. Data from CDF Santa Rosa.

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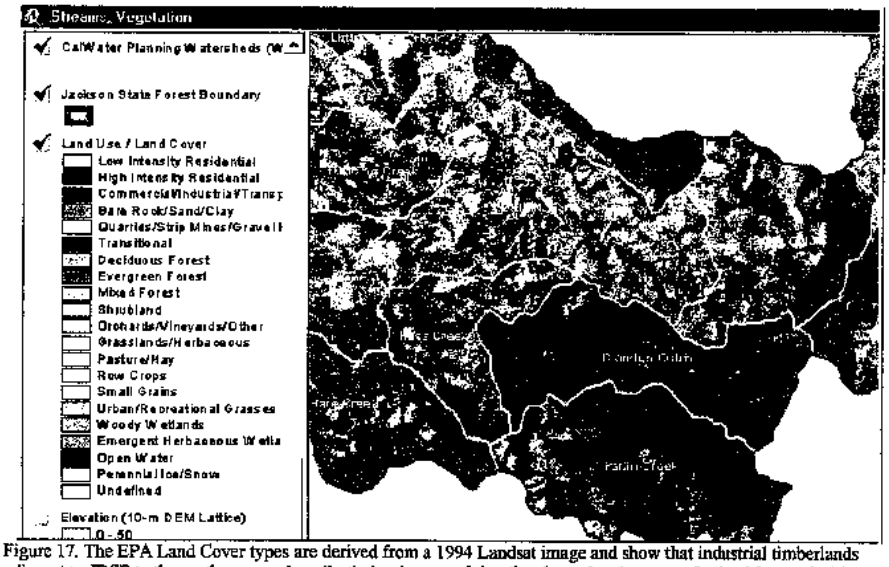

Figure 17. The EPA Land Cover types are derived from a 1994 Landsat image and show that industrial timberlands adjacent to JDSF to the north were so heavily timber harvested that they have the signature of mixed forest, deciduous forest and shrubland. JDSF mostly retained the signature of evergreen forests.

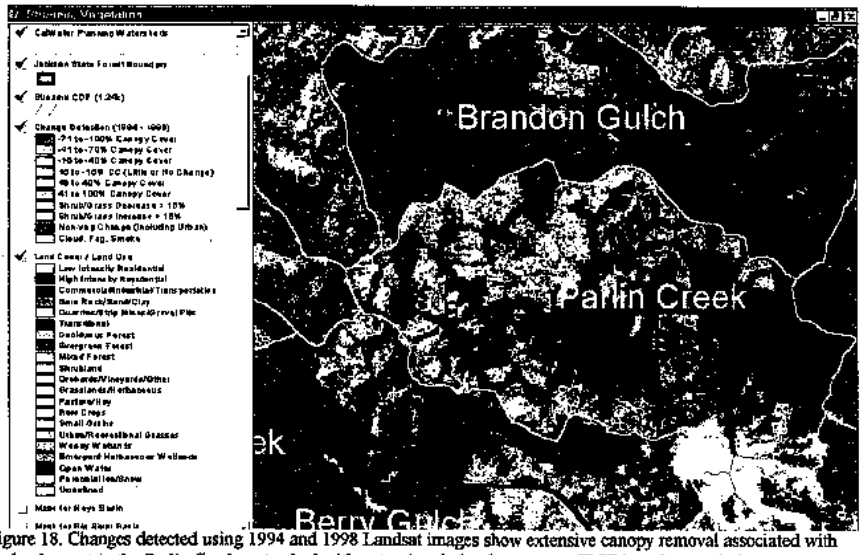

Figure 18. Changes detected using 1994 and 1998 Landsat images show extensive canopy removal associated with timber harvest in the Parlin Creek watershed with extensive timber harvests on JDSF in a short period.

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Landsat imagery has been checked by CDF FRAP and can be used to identify landscape changes such as those associated with timber harvest. Figure 18 shows that timber harvest within JDSF was quite rapid in some basins, like Parlin Creek, with the harvest area in just four years approaching the prudent limit for timber harvest of 25%.

Deficiencies in protection of riparian areas from timber harvest are discussed above. Given the recognized sediment over-supply of the Noyo River (EPA, 1999; GMA, 1999), no timber harvest should take place in inner gorge areas unless similar restrictions are imposed as described for Class III streams above (Riparian). Welsh (personal communication) and Brosofske et al. (1999) note that timber harvest can affect ground water temperature, which in turn effects the temperature of surface flows. This relationship argues for selective logging, not patch clear cuts.

Cumulative Effects

17 The JDSF Plan does not sufficiently address cumulative watershed effects regarding forests, timber harvest impacts, roads and erosion and major effects like the loss of the coho salmon. Page 122 of the EIS states that sediment from logging operations will be fully mitigated and; therefore, sediment contributions will be insignificant. This is the same fundamental de-constructionist logic that has crippled cumulative effects analysis under the Forest Practice Rules (Dunne et al., 2001). The Science Panel Report (Ligon et al., 1999) points out:

> "the primary deficiency of the [Forest Practice Rules] is the lack of a watershed analysis approach capable of assessing cumulative effects attributable to other non-forestry activities on a watershed scale. As currently applied (the rules) do not provide the necessary cumulative effects assessment at the appropriate temporal and spatial scales."

18 The University of California has recently funded an important study entitled: *A scientific basis for the prediction of cumulative watershed effects* (Dunn et al. (2001), which should have been used as a guideline to develop the cumulative effects section in the JDSF Plan. Instead the Cumulative Impacts section is less than a page long. Although the Plan promises basin-wide context discussions for fisheries and wildlife which will fulfill cumulative effects analysis requirements, such discussions are not found in the JDSF Plan.

Dunne et al. (2001) explain that large land surface disturbances, such as the recent extensive timber harvests surrounding and within JDSF, cause effects which are sometimes hard to quantify but known to occur:

> "Generally speaking, the larger the proportion of the land surface that is disturbed at any time, and the larger the proportion of the land that is sensitive to severe disturbance, the larger is the downstream impact. These land-surface and channel

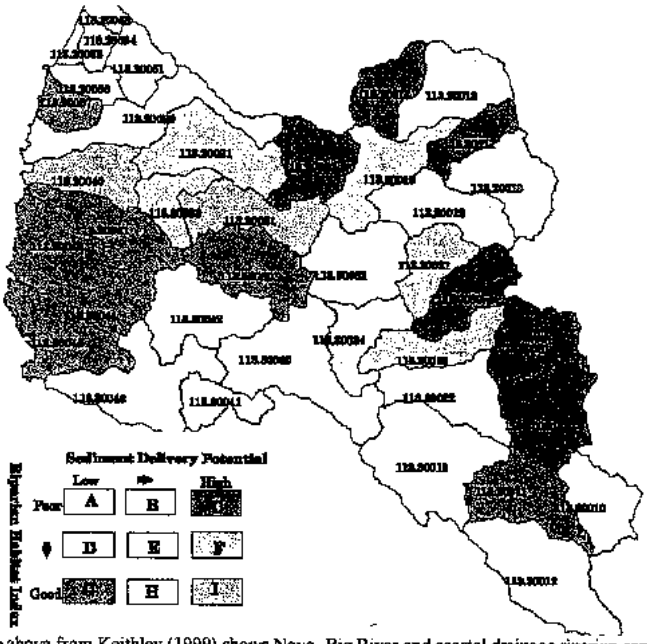

Figure 19. The map above from Keithley (1999) shows Noyo, Big River and coastal drainage riparian conditions and potential sediment yield. The dark green polygons represent the best prospects for restoration, most on JDSF.

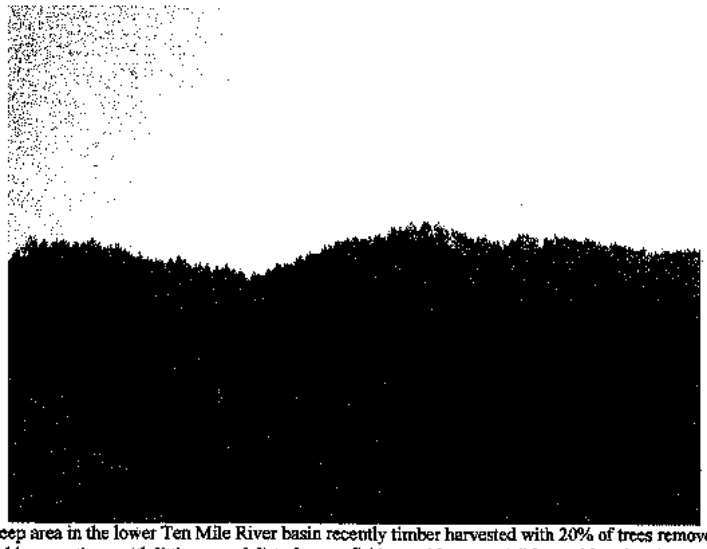

Figure 20. Steep area in the lower Ten Mile River basin recently timber harvested with 20% of trees removed using full suspension cable operations with little ground disturbance. Cable corridors are visible on ridge, forming a V just below the center of the photo.

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changes can: increase runoff, degrade water quality, and alter channel and riparian conditions to make them less favorable for a large number of species that are valued by society. The impacts are typically most severe along channels immediately downstream of land surface disturbances and at the junctions of tributaries, where the effects of disturbances on many upstream sites can interact."

19 There are no credible discussions in the JDSF Plan or the EIS of existing and potential cumulative effects as described by Dunne et al (2001). The JDSF Plan says it can't consider wider watershed areas because "private ownerships have differing management objectives." In fact Dunne et al. (2001) suggest use of remote sensing tools in such exercises, which were readily available to JDSF planners.

20 The JDSF Plan and EIS notes that the City of Fort Bragg periodically must draw its water through Ranney collectors because of excessive turbidity. It goes on to say that things are improving, but fails to correlate past waves of land use to periodic water quality degradation and to acknowledge that JDSF plays a role in maintaining the quality of the Fort Bragg water supply.

There is no substantive discussion of a huge cumulative effect; the virtual loss of coho salmon as a result of land use practices. The extremely intensive timber management since 1985 in the Noyo River Basin and surrounding watersheds such as Pudding Creek, Ten Mile River and Big River have caused the disappearance or diminution of coho salmon in these areas, making the habitat on JDSF critical for the survival of the species regionally.

Restoration

The JDSF Plan tiers the importance of restoration below commodity outputs, when restoration objectives could really be perfectly compatible with a different approach to silviculture (see Forestry). Bradbury et al. (1996) *Handbook for Prioritizing Watershed Protection and Restoration to Aid Recovery of Pacific Salmon* is the definitive treatise on the hierarchy of restoration and should have been a key reference. Instead the JDSF Plan
21 offers no effective strategy for recovering coho and steelhead, saying only that JDSF will continue to study the fish and do good things for them.

From a review of efforts to develop a regionally comprehensive restoration strategy (FEMAT 1993, Bradbury et al. 1995, Pacific Rivers Council 1996, Spence et al. 1997), one can identify the basic elements of any restoration strategy:

- Protect refuge areas: At both a regional and local watershed level, the best remaining habitats that support native salmonids should be a priority for protection and any necessary restoration treatment. Such refugia are critical for the recovery of populations because they provide source areas for recolonization.
- Think process over structure: Effective restoration treatments address the underlying processes of ecosystem deterioration and do not merely modify damaged areas to achieve short-term goals.

21

- Protect source areas: As a function of cumulative watershed effects, headwater areas can influence aquatic habitat conditions along an entire river course, and are therefore a priority for protection and restoration.

- Diffuse time bombs: Many habitats exist downstream from disturbed slopes that have not yet expressed their potential impact. Priority areas for recovery are those which are above prime habitat or refugia where erosion will inevitably be triggered by a major storm or catastrophic event.

The highest priority restoration targets should be the South Fork Noyo River (including Parlin Creek), Caspar and Hare creeks and Russian Gulch. These areas are known to be the last, healthiest habitats for coho salmon upon which the restoration of the species regionally rely. Watersheds should have rest from timber harvest unless JDSF converts to restoration forestry techniques as described below (Forestry). Streamside roads should be decommissioned or re-engineered to minimize surface erosion, potential crossing failure and associated gully erosion.

Keithley (1999) used riparian condition, gradient and watershed disturbance in gauging the restoration potential of sub-basins in the Noyo and Big river basins as well as adjacent coastal tributaries. Figure 19 shows a map of potential sediment yield and riparian conditions, which Keithley (1999) saw as suitability for restoration. Areas with good riparian and lower sediment yield are recommended for higher priority and fall on JDSF.

Some northwestern Big River sub-basins still maintain viable coho juvenile populations (NMFS, 2002), while tributaries in JDSF like Chamberlain Creek and James Creeks are not known to harbor them. The recent acquisition of some of the western portion of the Big River basin by the Mendocino Land Trust makes this an ideal time to try to restore the entire lower Big River, including JDSF.

Sensitive Amphibians

Amphibian species may be better indicators of stream health than coho salmon and steelhead. Sensitive species like the tailed frog (Ascaphus truei) have very exacting habitat requirements and do not travel extensively during the course of their lives (Welsh and Ollivier, 1998). Their viability has been linked to the presence of healthy riparian canopies, cold water and clean coarse streambed substrates (Welsh and Ollivier, 1998). Tailed frogs are known to occur in JDSF (Macedo, 1999) and they are also recognized in the JDSF Plan as a Sensitive Species. Discussions are lacking, however, on the habitat needs of this sensitive amphibian species and how timber harvest in riparian zones or upland areas will help protect them.

22

Tailed frogs have water temperature tolerance similar to coho salmon. Their eggs are destroyed at 18.5 degrees C (Brown, 1975), so streams that support this species must maintain a cold-water thermal regime similar to that required by coho salmon (Welsh et al., 2000). Even partial removal of stream canopy can increase water temperatures and decrease relative humidity along the stream corridor, which can make these areas unsuitable for tailed frogs (Bury and Corn, 1988).

Page 23 numbering skipped

The need for protection of tailed frogs is another reason that riparian harvests in JDSF need further study. The liberal CFPR harvest guidelines on Class II and Class III streams may directly affect frogs through canopy reduction and warming or through detrimental sediment contributions from headwaters. If tailed frogs are protected in upstream areas, it virtually assures that coho salmon habitat will be suitable in reaches below.

Forestry

While I am not a forester, I have seen examples of selection silviculture very near JDSF that could be applied to the Forest. This approach would end controversy, advance forest health, allow salmon and steelhead recovery and provide a high and stable flow of timber.

The Parker Ranch on the North Fork Ten Mile River offers an example of how JDSF could be managed for timber and restoration simultaneously. Full suspension cable systems are used almost exclusively, resulting in little ground disturbance and just 15 foot-wide cable corridors. I saw a steep, landslide prone ridge about one third of a mile long which had 20% of the young trees removed but only thin sky-line corridors were visible (Figure 20). Had this slope been cut with even aged management, a major risk of landsliding would have resulted.

23

Logging roads are only one truck wide and traffic is radio coordinated. The forester checks for erosion along roads during winter storms following operations. These roads are covered in duff and vegetation within a few years after harvest. Slash from timber operations are spread out over the timber harvest site and mixed with dirt. This increasessoil microbes and fungi and adds to filter capacity. The Parker Ranch runs summer eco-tours on horseback in areas shortly after harvest.

The growth of young conifers on the Parker Ranch are somewhat stunted due to competition like those on JDSF. The planned logging will take place over 60 years with four entries. The growth increment increases on the order of 2.5% after thinning with suspension cable logging. The basal diameters of the trees will continue to increase as the thinning from below occurs until at 60 years many trees will be 24-36 inches in diameter or more.

JDSF should abandon demonstrating outmoded timber harvest practices and begin to demonstrate restoration forestry. The low impact techniques described above would win back the confidence of local people concerned with the health of JDSF and the protection of its fisheries and wildlife. This mode of operation would obviate the need for herbicides and be more compatible with restoration objectives. Finally, adopting this mode of operation would end the legal and political gridlock, which has stopped timber flow out of JDSF.

Monitoring/Adaptive Management

It is laudable that the JDSF Plan commits the Forest to a course of adaptive management, whereby scientific data will be used to gauge success of management and objectives

24

modified if results suggest that strategies are not working. The monitoring plans advanced, however, are not crisply focused on critical ecosystem functions and other beneficial uses, such as Fort Bragg's water supply. Walters (1996) noted that many entities world wide claim to be practicing adaptive management but that few had properly working examples. He further warned that unless the management actions were sufficiently different than previous activities, it would be difficult to discern between normal environmental fluctuations and those associated with management. The JDSF Plan runs this risk with subtle, continuing effects from timber harvests confounding recovery.

Monitoring suggestions are as follows:

24

- Turbidity measurements need to be taken by continuous recording devices stations throughout JDSF, particularly before and after any activities such as logging or extensive road decommissioning.
- Fine sediment in pools (V*) should be used every five years or after major storm events to gauge the recovery of pool volumes and discover potential sediment problems.
- Aquatic macroinvertebrates should be monitored at stations throughout JDSF using California RAPID Bioassessment protocols (CDFG, 1999) and similar in design to Friedrichsen (1999)
- Coho and steelhead spawner surveys on JDSF should be arranged with CDFG with the potential of involving volunteers from local high schools to improve cost-efficiency.
- Monitor ambient air temperatures above streams at different locations with varying canopy and riparian cover and relate to water temperatures.

This latter exercise could be directed at restoring water temperature to optimal for coho salmon and conditions to suitable for tailed frogs. Experiments also need to be conducted to see if thinning from below in the riparian zone is more effective at improving water temperatures versus removing dominant trees. Further timber harvest will likely not be needed for the latter study because the full range of riparian conditions currently exists on JDSF.

The JDSF Plan suggests a need for a State Forest Data Base, which is just beginning to be considered. While such a database might be useful for CDF overall, JDSF should become an active user of the KRIS Noyo and Big River projects because they are ideal adaptive management tools.

Sincerely,

Patrick Higgins

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Letter PH-250

Response to Comment 250.1
Please refer to the DEIR Appendix 8C, pages 13-22 for a detailed information about the status of coho and steelhead in and around JDSF.

Response to Comment 250.2
Appendix 8C, page 13 acknowledged the federal ESA listing status of coho and steelhead and that both species have undergone well-documented declines in overall abundance. However, the DEIR did not specifically cite those two documents the commenter identified. The DEIR did cite the NMFS (1996) coho status review and the Federal Register (Vol.65, No. 110, June 7, 2000) that officially noticed the listing status of Northern California steelhead trout. However, the DEIR neglected to acknowledge the coho status review by the CDFG and their recommendation for listing as endangered under CESA. Therefore, paragraph 2 on page 107 should have included the wording, "The California Department of Fish and Game has conducted a status review of coho salmon in the California Central Coast Evolutionarily Significant Unit and has recommended the species be listed as endangered under CESA."

Appendix 8C, pages 15 and 16 reports on the general decline of coho populations regionally and in Mendocino County, as well as in the Little North Fork Noyo River between 1967 and 1999.

Response to Comment 250.3
A discussion of the species shift from coho salmon to steelhead in the Little North Fork Noyo River using Burns (1972) and Valentine (2002) data can be found on page 16 of Appendix 8C.

Response to Comment 250.4
Barriers to migration were discussed in Appendix 8C, page 15. A barrier on Parlin Creek (bedrock sheet) and the South Fork Noyo (dam) were identified. A total of 55 definite, probable, or possible barriers to fish migration were identified in the DEIR based on CDFG stream surveys. These barriers are also identified on Figure D in the Figures section. The egg station weir was identified as blocking migration at low flows in Appendix 8C, page 16.

Water extraction facilities are discussed on pages 372 and 373 of the DEIR.

Response to Comment 250.5
Thank you for pointing out the omission. The Gallagher et al. (2000) was not supplied to the consultants developing the DEIR. Since receipt of this comment, a request for this document was made to Sean Gallagher (CDFG) in Fort Bragg. That document has not arrived yet. However, Gallagher (2002) was received. The following passage supercedes the first paragraph of DEIR Appendix 8C, page 16:

> Gallagher (2002) reported the results of the 2000-2001 spawner surveys and generated adult coho salmon and steelhead

population estimates using two different methods. The steelhead redd-based estimate ranged from 258(±7) to 583 (±16) with an Area Under the Curve (AUC) estimate of 127-416. The redd-based coho population was estimated to be 555 (±16) with the AUC estimate being 592. Almost twice as many steelhead redds and many more times coho redds were observed during 2000-2001 surveys than the 2000 period (Gallagher 2002). This was attributed to the Gallagher (2000) surveys not starting until late-February and not being able to survey the entire river (Gallagher 2002).

Response to Comment 250.6
The DEIR used and referenced many CDFG stream surveys from 1995-1999 to describe the aquatic conditions on JDSF existing conditions. Many of these referenced surveys also extended beyond the JDSF boundaries. In those cases, the instream conditions were reported in the aggregate and not broken out by portions of streams within and outside JDSF. In addition the DEIR utilized unpublished instream habitat information developed by Stillwater Sciences (1997). Please see Appendix 8C for aquatic condition information.

Response to Comment 250.7
Please refer to Appendix 8C, pages 1 and 4 for a discussion of Knopp's (1993) V* results. The significance of the Knopp (1993) study was that it was designed to determine which components of cold water fish habitat could serve as future regulatory tools and provide a means to achieve effective fisheries protection. The project sought to determine: 1) Which physical elements of instream habitat were affected by human activity in the upslope watershed; 2) What were the current range of values for those elements; 3) What was the current range of values that represented undisturbed habitat conditions; and 4) How the results of the study might be used in a regulatory framework. The study found that V*, Riffle Armor Stability Index (RASI), and the median particle size of riffle gravels (D50) showed significant differences between reaches with different levels of upslope disturbance. The study results showed V*, RASI, and D50 values responded negatively to the amount of management on public and private land. However, the study did not evaluate how the observed differences in habitat affected fish populations. The DEIR acknowledged that timber management can result in increased delivery of sediment to watercourses and proposed additional measures, beyond the FPR, to mitigate the potential impacts. The new information does not change the conclusions of the DEIR.

Response to Comment 250.8
Please refer to Appendix 8C, pages 10-12 for a discussion of water temperatures and the role of riparian vegetation and management.

Response to Comment 250.9
Please refer to Appendix 8C, pages 1 and 4 for a discussion of V* referencing Knopp (1993) and Lisle and Hilton (1999). V* is the ratio of average volume of fine sediment to residual pool volume. A higher V* value indicates a pool that is perhaps subject to an abnormally high

amount of fine sediment loading. However, V* values can vary depending on local geology, geomorphology, hydrology, and background sediment loads. As pools fill with fine sediments the habitat generally becomes less suitable for salmonids, particularly coho salmon. High V* values may also correlate with filling of interstitial spaces between gravel and cobbles resulting in low spawning habitat quality.

Response to Comment 250.10
Please see Appendix 8C, pages 11 and 12 for a discussion of where water temperatures exceed the threshold for coho salmon.

Response to Comment 250.11
Please see Appendix 8C, pages 11 and 12 for a discussion of where water temperatures exceed the threshold for coho salmon. The discussion contains information regarding water temperatures exceeding thresholds on the mainstem S.F. Noyo and N. F. Big River. However, no information is presented regarding water temperatures on private land.

Response to Comment 250.12
Please refer to Appendix 8C, pages 6-10 for an in-depth discussion of riparian health and function.

Response to Comment 250.13
Please refer to the DEIR pages 111-112 for a description of the proposed riparian protection measures.

Response to Comment 250.14
Please refer to the DEIR, page 369 and Appendix 11, pages 7-11 for the acknowledgement of the TMDL reports for the Noyo and Big Rivers.

Response to Comment 250.15
Please see Appendix 11 for a review of sediment and water quality problem that include a discussion of the Koehler et al. (2001) study, of which Graham Matthew's was a co-author.

Response to Comment 250.16
The DFMP and DEIR propose management practices and mitigation measures that exceed the standard FPRs. These include increased protection for watercourses developed to provide for LWD delivery for increased stream complexity and a comprehensive road management plan developed to reduce sediment delivery from roads.

As describe in the DFMP, inner gorge areas have been designated as Special Concern Areas and will be evaluated by a CEG on a project basis to develop appropriate measures needed to avoid or minimize impacts.

Response to Comment 250.17-250.20
Please refer to General Response 9 for a discussion of cumulative impacts.

Response to Comment 250.21
The DFMP does not present a specific and prioritized recovery strategy to restore fish and aquatic habitat. Instead the DFMP relies on a series of mitigation plans, prescriptions, and mitigations to promote recovery. The Road Management Plan will significantly reduce the amount of sediment reaching the watercourses and help continue the recovery of salmonid spawning and rearing habitat. The Class I and II WLPZ riparian prescriptions that require high basal area, large tree and overstory canopy retention standards will improve LWD loading and fish habitat complexity. The Class I LWD mitigation will allow only no-cut or thin-from-below silviculture to accelerate the delivery of large wood to the streams in those watercourses not meeting target levels.

Response to Comment 250.22
Please refer to the discussion on tailed frogs in the DEIR starting on page 232, and page 266 for a discussion on potential impacts.

Response to Comment 250.23
Many of the concepts presented in the comment as "restoration forestry" are requirements of the Forest Practice Rules (road width and slash treatment for hazard reduction), relatively common forest practices (thinning or selection with 15 to 20 year reentry and radio controlled truck traffic), or are incorporated into the DFMP (CEG of potential unstable areas and integration of timber management and recreation). Approximately 2/3 of JDSF will be managed using uneven-aged silvicultural methods or to develop high density, large tree, late seral characteristics, and as indicated in the short term harvest schedule, much of the harvesting in the even-aged areas will be commercial thinning. JDSF has been demonstrating "restoration forestry" for over 50 years. The Forest has an increasing timber inventory, an active recreation component, recovering watercourses, sensitive plant and animal populations, active long-term research areas and has produced a steady flow of high quality forest products.

Response to Comment 250.24
Monitoring and adaptive management by its nature needs to be flexible, and the DFMP and the DEIR recognize this. It is likely that there will be a period of several years before JDSF managers develop a working adaptive management program. For example, in Humboldt County, Pacific Lumber Company's (PALCO) HCP incorporated an adaptive management element, and it was only after several years of HCP implementation that PALCO began to understand how adaptive management could be effectively used. Likewise, it will take JDSF managers several years to develop a functioning and effective adaptive management program. Part of this program will likely include various monitoring and surveying efforts. It would not be prudent at this time to develop a large expensive monitoring or surveying program that would produce large amounts of data that are expensive to collect and analyze, and difficult to interpret.

References

Gallagher, S.P. (2002). ***2000-2001 Annual Report: Coho Salmon and Steelhead Spawning Surveys In the Noyo River, California. CDFG Steelhead Research And Monitoring Program***. Fort Bragg, CA. 49pp.

Gallagher, S.P. (2000). ***Results of the Winter 2000 Steelhead Spawning Survey on the Noyo River, California With Comparison To Some Historic Habitat Information***. CDFG Steelhead Research and Monitoring Program. Fort Bragg, CA. 28pp.

LH-251

California Native Plant Society

Dorothy King Young Chapter – P.O. Box 985 – Point Arena, CA 9548

July 17, 2002

Christopher P. Rowney, Director
California Dept. of Forestry and Fire Protection
P O Box 944246
Sacramento Ca 94244-2460

Re: Draft Environmental Impact Report
Jackson State Forest Management Plan

Dear Mr. Rowney:

The following comments are submitted on behalf of the Dorothy King Young (DKY) Chapter of the California Native Plant Society (CNPS), regarding the Draft Environmental Impact Report (DEIR) and Draft Management Plan (DFMP) for the Jackson Demonstration State Forest (JDSF).

Previous Comment Letter: Although I submitted a letter, dated May 30, 2001, commenting on the JDSF Draft Management Plan, and received a written reply from you, and a phone call from JDSF Manager, Mark Jamison, in response, that letter was not included with the other comments in the DEIR. Please make all my comments part of the administrative record. 1

General Observation: The public pressure to restore some or all of the ecosystems within JDSF is partly due to the fact that there is so little forested parkland on the Mendocino Coast. Since JDSF comprises nearly 50,000 acres of public land, it is to be expected that the public would want some say in how that land is utilized.

Objectives of Management Plan: The DFMP, on P. 24, states that "The primary objectives of the Plan are to maintain healthy forested landscapes, healthy streams and a financially viable timber management program, in a manner applicable to small and large landowners in the redwood region."

2 CNPS maintains that a "healthy forested landscape" is one with a high level of biological diversity for each particular vegetation type and functioning, intact, ecosystems. This implies preservation of understory plants and other life forms that contribute to the health of the ecosystem. The DFMP should explain how biodiversity will be achieved and sustained while viable timber operations take place.

The DFMP goes on to claim that the California Department of Forestry and Fire Protection (CDF) "maintains a vigorous research and demonstration program ..." designed to "address public trust resource issues at a comprehensive landscape level." CNPS must dispute this claim, since 1) JDSF has no permanent biological science staff; 2) Neither the DFMP or the DEIR provide any plan for ongoing, peer-reviewed research; and 3) JDSF's research and demonstration programs thus far have done little to address "public trust resource issues" to the satisfaction of the large public sector that regards plants, fungi and invertebrates as public trust resources. 3, 4 5

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Page 140 of the DEIR invokes the Native Plant Protection Act (NPPA) of 1977. CNPS has obtained legal opinion that provisions of the NPPA do not take effect until requirements of the California Environmental Quality Act (CEQA) have been met. CNPS's position is supported
6 by the California Board of Forestry and Fire Protection and the California Attorney General's Office defense of the lawsuit filed by Donald Weburg on this topic earlier this year. Therefore, references to NPPA should be deleted from the DEIR.

Silvicultural Goals: The DEIR (P 172) states the goal of managing to preserve and/or recruit old growth groves and late seral stands. The area of mature tree habitat to be so managed is stated to be 11,649 acres, or less than 24% of JDSF's total acreage. (It is not clear from the
7 DEIR how much habitat would be preserved as "old growth aggregations".) While this is laudable, the DFMP and DEIR do not demonstrate that it is sufficient to achieve the DEIR's Goal #3 to "promote and maintain the health, sustainability, ecological processes and biological diversity of the Forest and watersheds …".

As an example, an informal plant survey by CNPS members came up with over 80 native plant species along the riparian corridor in Brandon Gulch, indicating a high level of biodiversity. Given that this area is currently proposed for logging under an approved THP, it is not clear
8 from the DFMP or the DEIR the extent to which Brandon Gulch would be managed to promote late seral characteristics.

9 Nor is it clear that the plan to restrict conifer species diversity outlined on P 176 of the DEIR is compatible with preservation of biological diversity. Many life forms are supported by conifers other than redwood or Douglas-fir, and by native hardwoods.

Research and Demonstration: The section on PP 26 and 27 of the DFMP should specify that JDSF's the research and demonstration programs are aimed at timber management, rather than
10 forest management. A forest is a complex ecosystem dominated by large trees, but made up of many other organisms from microbes on up the food chain.

Since the effects of even-age timber management, and many other logging prescriptions, were sufficiently demonstrated long ago, CNPS would like to see research aimed at actual forest
11 health – a scope that goes beyond trees to include the many life forms and factors that make up a forest. Research should focus on compatibility of logging and preservation of biodiversity.

A meaningful research program would require on-site biological science staff, written, long-term research goals, a plan for scientific peer review, and publication of research results in appropriate journals. There are many opportunities for collaboration with the academic community. Research is not conducted in isolation, and JDSF's programs would benefit from association with the rest of the scientific community, and peer review.

It is therefore logical that funding for a relevant, viable research and demonstration program should come from the revenue produced by JDSF. CNPS objects to the use of that revenue for
12 out-of-area programs like the so-called "urban forestry" programs, and requests that a considerable portion of the JDSF revenue be used to fund research programs in JDSF.

For a very large public forest with a mandate for research and demonstration, it seems odd that less than 10 percent of JDSF's total acreage is earmarked for research/demonstration projects.
13 CNPS would like to know how this can achieve the R & D mandate of JDSF.

If the management at JDSF insists on retaining its acreage of non-loggable pygmy forest, then research projects on restoration, recovery and fire regimes in the pygmy forest would be very

2

useful. The current, damaged state of JDSF's pygmy forest would provide ideal conditions for such research.

Pygmy Forest: Mendocino Pygmy Forest is a unique ecological system recognized by the California Natural Diversity Database as a sensitive plant community type. Therefore, every effort should be made to preserve what is left of this habitat. Since pygmy forest has no logging potential, and since no research projects on pygmy forest are being conducted at JDSF, CNPS would like to be told why pygmy forest is included within JDSF at all. Why doesn't
14 JDSF convey its 600+ acres of pygmy forest to State Parks, a local land trust, or other agency, to be managed as a preserve?

Pygmy forest is classified as wetland habitat by the US Fish and Wildlife Service, and is also very sensitive to mechanical disturbance. The pygmy forest within JDSF has not been well managed, but has been subjected to off-road vehicles (ORVs) and dirt bikes, road building, poor road maintenance, invasion by exotic weeds, and trash dumping. While the DFMP acknowledges that ORV use is illegal in JDSF, there has been little or no enforcement. The DFMP and DEIR do not provide any detailed management plan to protect the pygmy forest from high-impact vehicle activity. CNPS would like JDSF to either generate a good plan to
15 manage its pygmy forest, or a plan to turn those lands over to another organization.

Given the concentration of illegal activities in the pygmy forest portion of JDSF, the plan on P 107 of the DFMP for annual review of reported nuisances is laughable. It states that,
16 "Additional restrictions will be implemented as needed." Those restrictions have not been implemented yet, and they are needed now. Citations for illegal vehicle use, dumping, shooting, etc. represent an excellent potential source of revenue. Have neither JDSF, State
17 Parks, or the local law enforcement agencies considered this?

Recreational user surveys are not an accurate means of gathering information about illegal or high-impact recreation in the pygmy forest. It is well known that guidebooks for users of ORVs and trail bikes recommend the pygmy forest at JDSF and provide maps and directions to the local, backroad entries into the forest. This refutes the claim that recreational use is mainly
18 by local residents.

The discussion of "Pygmy Cypress Series" on P 132 of the DEIR seems to include some misrepresentations. For example, it states that pygmy cypress is the dominant or important tree in the canopy for pygmy cypress series. It also states that Bolander pine and pygmy cypress are
19 found within stands of bishop pine. Actually, when Bolander pine and pygmy cypress occur together, they constitute pygmy forest, which may occur in small areas surrounded by bishop pine forest.

The plan stated on P 144 of the DEIR to remove some pygmy forest plants in order to develop habitat for the lotis blue butterfly is alarming. This butterfly has not been seen for many years and is possibly extinct. The DFMP and the DEIR fail to present any scientific evidence to
20 justify the taking of plant species of concern and the destruction of a sensitive plant community type for such a speculative project. CNPS would like to see this proposal deleted.

Plant Species of Concern: The DFMP and the DEIR contain contradictory information about sensitive plant species on JDSF. A complete floristic inventory of JDSF is needed to resolve
21 the apparent confusion about plant species of concern, and to plan for their management. This inventory would not be merely "beneficial" as stated on P. 17 of the DFMP – it is absolutely

necessary. The misinformation about plant species is detailed in letters submitted by Teresa Sholars of College of the Redwoods, and by Greg Jirak of the CNPS State Forestry Program.

22 CNPS believes that a complete floristic survey of JDSF is absolutely essential for protection of species of concern and their habitats. Surveys on a project-by-project basis, as outlined on PP 146 and 147 of the DEIR will not be sufficient to protect special plant species or habitat types. Strangely, even Alternative E, the environmentally preferable alternative, specifies this project-
23 by-project approach.

Conclusion: The management of JDSF is a very difficult issue, given that it is a very large area of public land that is visible to and accessible by the public. CNPS would like to see JDSF, as public land, managed in a way that directly benefits the public, i.e., the people of California. The DEIR And DFMP propose to manage JDSF in a way that benefits only a small sector of the public – namely large timber operators (while the plan pays lip service to small timber operators, the size of the proposed logging operations effectively eliminate benefit to
24 small operators) and programs like "urban forestry" that do not benefit actual forests.

In opting for a "business as usual" approach, CDF and the management of JDSF are skating on thin ice. There has already been a successful lawsuit over management practices on JDSF, and the Sierra Club brought a successful lawsuit against the County of Mendocino over its treatment of pygmy forest. CNPS would like to see JDSF managed in a progressive, forward-thinking way that would avoid major conflicts and legal actions.

The Dorothy King Young Chapter of CNPS recommends that CDF revise the DEIR and DFMP to remedy these problems, then resubmit both for public review and comment prior to
25 preparation and certification of a final EIR.

Sincerely,

Lori Hubbart

Lori Hubbart, Chapter President
Dorothy King Young Chapter, CNPS

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California Native Plant Society

Dorothy King Young Chapter, California Native Plant Society

May 30, 2001

California State Board of Forestry
P.O. Box 944246
Sacramento, CA 94344-2460

Re: *Jackson Demonstration State Forest Management Plan Draft, April 13, 2001 (Draft Plan)*

Dear Board of Forestry Members:

In this letter, the Dorothy King Young Chapter of the California Native Plant Society (CNPS) comments on the Draft Plan for Jackson Demonstration State Forest (JDSF).

The greatest concern of CNPS is that the Draft Plan is dated April, 2001, yet we were able to obtain a copy just a few days ago. The public has not been given adequate time to comment on the Draft Plan, so we ask that the Board of Forestry make no decisions about this document now, but extend the public comment period for another 60 days.

Due to the lack of time, the CNPS comments will necessarily be brief, and will focus mainly on the management of Mendocino Pygmy Forest, since other groups will provide detailed comments on forestry issues. CNPS will provide additional comments at a later date.

Pygmy Forest - Page 14

The paragraph headed, "Pygmy Forest" makes scientifically inaccurate statements about the extent of pygmy forest habitat.

Mendocino County's type of pygmy forest is unique in terms of soils and vegetation. It cannot be equated with pygmy forest found anywhere else. (T. Sholars, pers. communication, 3-01)

The original extent of Mendocino Pygmy Forest was about 4,000 acres. R. Sholars identified 26 areas of significant pygmy habitat in our county, of which 13 were lost as of 1984. Thus, the statement that JDSF's 613 acres of pygmy forest represents "15 percent of the pygmy forest found in California (and worldwide)" is incorrect.

It is unclear how many acres remain of true Mendocino Pygmy habitat. If a countywide survey of pygmy forest land is necessary (and we believe it is), then the Draft Plan should state that.

Forest Protection – Law Enforcement -Page 82

In JDSF pygmy lands, the use of motorized vehicles is widespread, even though prohibited. All types of vehicles compound the damage done by the road cutting, and hasten erosion. There is little enforcement of the prohibition against motorized vehicles. JDSF should form a partnership with local law enforcement agencies to cite unlawful vehicle drivers. Citations could provide additional revenue.

The Draft Plan refers to "laws specific to the state forest system" but does not address any laws regarding unlawful vehicle usage. The prohibition against motor vehicles must remain in effect, and must be enforced in a more effective manner. Some of JDSF's considerable profits should be allocated for such enforcement.

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The pygmy forest ecosystem includes a groundcover of lichens and bryophytes that protects the forest form erosion. Once this layer has been compromised, water can breach the underlying hardpan and wreak havoc with the overall hydrology. Illegal motorized vehicles are a particular threat to these soil organisms and to the rare species of the pygmy forest.

According to the *Draft Management Plan for Mendocino Coast Pygmy Forest*, T. Sholars, 1997:

> "The Pygmy Forest is really a "bog" community that has a perched water table under the [hard]pan, and a wet soil on top of the pan year round. Any development such as roads, ditches, soil pits, septic tanks, etc. dramatically impacts the delicate balance."

Ditches and culverts dramatically alter the hydrology of this stable, but delicately balanced ecosystem by adding extra water or cutting off water flow. This is a major problem in JDSF, and CNPS feels that the Draft Plan needs additional work in this regard.

Appendix III - Pygmy Forest – Page 141

The Draft Plan states that areas containing cypress (presumably pygmy cypress) that occur on non-pygmy sites "may be subject to harvesting and are not included in this Special Concern Area." The pygmy cypress (*Cupressus goveniana ssp. pigmaea*), is a rare species classified as a Species of Special Concern by the California Department of Fish and Game. As such, it is subject to consideration under the California Environmental Quality Act, wherever it occurs, and the Draft Plan must ensure that harvesting activities will not result in "take" of or cumulative impacts to the pygmy cypress.

The Draft Plan states that JDSF's 613 acres of pygmy forest will be managed for appropriate recreation. The pygmy forest bears too much of the burden of JDSF's recreation mandate. The result is ongoing degradation of JDSF's pygmy forest due to roadcuts and vehicle activity.

There are no easy answers for the extensive damage already done to the pygmy forest lands of JDSF. Ideally, the roadcuts would be restored to native vegetation cover, and some restoration efforts have already been started. The amount of restoration needed would be a costly project, but the Draft Plan should include funding strategies for restoration.

In summary, all remaining pygmy forest in Mendocino County should be given preserve status, with access limited to foot traffic on raised boardwalks. JDSF should take the lead in forming a regional management plan for all pygmy forest lands in Mendocino County. This plan could be in the form of a Natural Communities Conservation Plan.

Scientific expertise is badly needed to guide management plans for the pygmy forest. Three of the leading experts on the Mendocino Pygmy Forest, Hans Jenny, Robert Sholars and Walt Westman, are now gone. Teresa Sholars is the remaining expert, and she should play a key role in management plans for Mendocino Pygmy Forest.

Public Participation

CNPS is aware that a number of people representing a range of stakeholders formed a JDSF Citizens' Advisory Committee to make recommendations on the management of JDSF. CNPS would have like to see more of that committee's well-considered recommendations incorporated into the final Management Plan.

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Research

CNPS, as a science-based conservation organization, recognizes the value of ongoing research in California's state forests. However, the Draft Plan shows the need for JDSF's research program to be made more rigorous. CNPS would like to see provision made for peer review, and would like the results of studies to be made available to the public. Research and demonstration projects should include issues that may not have been considered back when JDSF was founded, such as sustainable timber production and preservation of biological diversity.

Budget

The budget for operation of JDSF is tied to its effectivencas as a research organization. The Draft Plan shows that JDSF is woefully under-budgeted and understaffed. Research and demonstration projects must be meaningful in a modern context of heightened environmental awareness. This would require considerably more in the way of funding and staffing than is currently provided for. JDSF should have at least one botanist and one biologist on staff. Some of the profits from JDSF timber harvests should be re-invested in research and staffing.

Other Concerns

Lacking time to go into these, here is a brief list of additional concerns:

- THP conformation – how will JDSF ensure that harvesting practices conform to the Plan?
- Cumulative impacts – the Draft Plan does not provide for adequate cumulative impacts assessment.
- Management of natural resources –the Draft Plan must provide more detail on management and protection of plants, animals and habitats.
- Legal issues Having operated with a plan that a judge has found to be out-of-date, JDSF should see that pre-plan timber sale contracts conform with the new plan.
- Plan Duration – 10 or 15 years is too long for a plan to be in effect. The Draft Plan should include provisions for review and update, perhaps at five-year intervals.
- Amendments to Plan – Changes to the plan must incorporate public comment.

Conclusion

CNPS appreciates the research and effort that have gone into the creation of the Draft Plan. It represents an excellent beginning. We ask the Board of Forestry to schedule public hearings and solicit public input on the Draft Plan, to require consideration of the recommendations of the Citizens' Advisory Committee, to initiate an Environmental Impact Report (EIR), as required by law, and to put timber harvest activities on hold until both the Management Plan and associated EIR have been approved.

Sincerely,

Lori Hubbart, Chapter President
Dorothy King Young Chapter, California Native Plant Society

CC: Mendocino County Board of Supervisors

4

Letter LH-251

Response to Comment 251.1
See the preceding three pages. Your letter was sent to the Board of Forestry. The issues in your letter were considered in the drafting of the DFMP and the DEIR.

Response to Comment 251.2
Please refer to general response 1. Biodiversity is an important component of ecosystem health. Biodiversity will be provided for by the variety of management practices (from no harvest in old-growth stands and pygmy forest to a variety of harvesting regimes) that are proposed under the DFMP. The varied management practices will provide a variety of habitats, seral stages, and biotic and abiotic features that will allow for a diverse composition of taxa and genotypes across the JDSF.

Response to Comment 251.3, 4 and 5
Please refer to general response 1. Research projects have been conducted on a wide range of topics as discussed in the DFMP including mushroom productivity, baseline inventory data on wildlife species, and effects of thinning on tree growth. Many of the studies are peer reviewed and published, as is the case with the work completed by Redwood Sciences Lab in Caspar Creek.

Response to Comment 251.6
Please refer to Response to Comments GJ-236.10E.

Response to Comment 251.7
The DEIR contains a definition of "old-growth aggregation" on page 172. The DEIR also contains discussion on the retention of individual old-growth trees and identified groves of old-growth in addition to retention of old-growth aggregations. In addition to preserving old-growth groves, aggregations, and individual trees, "the DFMP will retain and develop late seral/successional forest characteristics" which will occupy about 20 percent of the State Forest and expected to total approximately 9,680 acres." This is expected to comply with Goal #3 of the DEIR. Refer to response to comment 255.25 for more information.

Response to Comment 251.8
Late seral characteristics will be managed for as identified in DEIR pages 171.-173.

Response to Comment 251.9
Conifer species diversity will be managed, not restricted, as described on page 176 of the DEIR where hemlock and grand fir are to be managed to not <u>increase</u> over current levels. This provides for a continued species mix to remain at or close to present levels and is compatible with preservation of biological diversity.

Response to Comment 251.10
Please refer to General Response 1.

Response to Comment 251.11
Please refer to General Response 1, and response to comment RL-238.19 and 20.

Response to Comment 251.12 and 13
Please refer to General Response 1.

Response to Comment 251.14, 15, 16, and 17
The DFMP commits to protecting the pygmy forest. The EIR concludes that, with mitigation developed for the Final EIR, no significant impacts to the pygmy forest will occur. Also refer to general response 1.

Response to Comment 251.18
Some ORV users from out of the area may use guidebooks that describe access and use of the Pygmy Forest. This fact however does not refute the DEIR assertion that recreational use is mainly by local residents.

Response to Comment 251.19
Please refer to Response to Comment GJ-236.10B for changes to text that clarify aspects of the pygmy forest.

Additionally, the following will replace the last paragraph in the Pygmy Cypress Series section (p. 132 of the DEIR; not to replace the "JDSF Distribution" sentence): "The fact that Bolander pine and pygmy cypress are surrounded by swaths of nondwarfed Bishop pine offers anecdotal evidence of fire ecology in the pygmy forest. The Bishop pine is a fire dependent species. Since the stands of Bishop pine are replaced after large fires, and since the pygmy forest species are surrounded by these stands, it is likely that the pygmy species can cope with some level of fire stress. It is unknown under which frequency, intensity, and scope of fire events the pygmy forest species could thrive. Further work on the life history of the pygmy forest species is also needed to understand the role of fire.

Response to Comment 251.20
Please refer to Responses to Comments GJ-236.10H and 236.10L, Mitigation 4.

Response to Comment 251.21 and 22
Please refer to Responses to Comments GJ-236.6, 236.7, and 236.10 for changes to the DEIR and DFMP that increase consistency in species information between the two documents.

Please refer to Responses to Comments GJ-236.10G and 236.10L, Mitigation 2 for changes to the DEIR and DFMP that will implement botanical surveys.

Please refer to Responses to Comments GJ-236.8, 236.9, 236.10K, 236.25b, and 236.46 regarding the comment that floristic surveys should be required across JDSF.

Response to Comment 251.23
The proposed project-by-project scoping, surveys and development of project measures to avoid or minimize significant impacts to sensitive plant resources are adequate conservation management strategies. Furthermore, knowledge of sensitive plant species and the flora of JDSF will increase as a result of project-by-project scoping and surveys.

Response to Comment 251.24
Please refer to General Response 1.

Response to Comment 251.25
CDF does not believe that any substantial new information regarding new impacts related DFMP that would change the analysis of impacts have been presented. Revision of the DEIR/DFMP and resubmission is not necessary.

JK-252

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July 17, 2002

Mr. Christopher Rowney
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

Re: Jackson Demonstration State Forest (JDSF) Draft Environmental Impact Report (DEIR) for the Comprehensive Update to the JDSF Management Plan, Draft (DMP), May 17, 2002

Mr. Rowney,

The California Indian Basketweavers Association (CIBA) is a statewide, inter-tribal, non-profit organization with over 900 members. Our mission is to preserve, promote, and perpetuate California Indian basketweaving traditions. Our Resource Protection Program works to protect the native flora and fauna that Native people rely on for subsistence, and to promote alternatives to pesticides wherever possible.

CIBA has several concerns regarding forestry herbicide use in JDSF. Native American uses of forest-dwelling native plants and animals are not only essential to the material existence of local tribes, but they are also an essential part of the Native cultural traditions. Without salmon, deer, tanoak, basketweaving and medicinal plants, and other forest species, the cultural traditions of California Indians would not be possible. We are concerned about impacts of herbicides to these species as well as the potential impacts to human health related to pesticide contamination of species used by Native Americans. Our specific concerns related to forestry herbicide use are addressed below.

Herbicide Use and Native American Collecting—Impacts to Human Health

The DEIR states that adoption of the DMP has the potential to impact traditional Native American gathering areas due to herbicide use. Not only would the DMP in its current form impact gathering areas, it also has the potential to impact the people who use those gathering areas. 2 The potential impacts to human health are not addressed in the DEIR.

Studies have shown that plant residues remain in berries and other plant tissues consumed by people and wildlife as well as plants used by California Indian basketweavers. The Department of Pesticide Regulation found that herbicide residues can remain in plant tissues
3 for as long as 80 weeks.[1] yet impacts to those that consume contaminated plants have not been addressed. Many of the plants targeted by herbicide spray programs are in fact native plants that are used by local Native Americans for food, basketweaving, and medicinal purposes, including tanoak, alder, and buckbrush. Many non-target native plants are inadvertently sprayed following timber harvest.

Herbicide Use and Native American Collecting—Inadequate Mitigations

The JDSF DEIR states that the JDSF staff will work with interested Tribes to identify important plant collecting areas, and shall seek to minimize the application of herbicides to plants of interest to the extent practical. These proposed mitigations are inadequate and inappropriate for several reasons, including the following:

- 4 The proposed mitigations are not specific enough to claim that the impacts will be less than significant after mitigations are implemented.
- 5 To adequately assess the range of species used by local Native Americans, JDSF should consult with traditional basketweavers, traditional herbalists, ceremonial dance leaders, tribal environmental staff, and tribal cultural programs.
- 6 It is unrealistic and inappropriate to expect the locations of all plants of interest to be documented and mapped. Plant populations change over time, depending on precipitation, disturbance, foraging pressures, and other stochastic factors.
- 7 Many plants used in traditional California Indian basketweaving are managed with fire and/or pruning to promote quality basketweaving materials. Therefore, the disturbances caused by timber harvest, broadcast burning, and herbicide use can promote this type of growth, and basketweavers may be inclined to use materials from disturbed sites if they are unaware of forestry herbicide use.
- 8 Other basketweaving plants are limited to riparian areas and perennial springs or streams. These plants can be contaminated by off-site movement of herbicides in water.
- 9 No reporting program to monitor the effectiveness of these mitigations is proposed as required by The California Environmental Quality Act (CEQA). According to the CEQA guidelines, the lead agency shall adopt a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to mitigate or avoid significant environmental effects [14 Cal. Code Reg § 15074(d)].

Suggested Mitigation Measures

CIBA believes that the best way to protect human health and the environment is to avoid the use of forestry herbicides (perhaps by minimizing even-aged silvicultural practices that promote the growth of plants typically targeted by herbicide spray plans). Elimination of herbicide use would eliminate the need to mitigate for potential impacts of these chemicals.

If forestry herbicides are used at JDSF, the following mitigations are recommended to prevent significant negative impacts to human health and the environment related to Native American collecting:

- Consultations with traditional baskerweavers, traditional herbalists, ceremonial dance leaders, tribal environmental staff, and tribal cultural programs, as well as tribal councils. 10
- A system of prior notification of herbicide applications should be implemented, with site locations and proposed dates of application made available to enable Native American gatherers to review and comment on the plans, and to gather the plants prior to spraying. 11
- Warning signs should be posted after spraying to alert visitors to the area who may be unaware of forestry herbicide practices. Signs should be in English and Spanish and should remain visible for one year after spraying, since the best available evidence indicates that herbicide residues can remain in plant tissues for that amount of time.[i] Particular attention should be given to sprayed areas in or adjacent to campgrounds, trails, roads, and river access points due to the high rate of use by the public. 12

Coho Salmon, Steelhead, and Forestry Herbicides

Coho salmon and steelhead, both listed as threatened under the federal Endangered Species Act, are known to occur within the JDSF. **The DEIR fails to address potential significant impacts of forestry herbicide use, even though the best available information indicates that many forestry herbicides are harmful to these sensitive species.** 13 Triclopyr butoxyethyl ester, (tradename Garlon 4), is highly toxic to many fish species, including coho salmon.[ii] This species was listed as federally threatened in 1997, and in 2000, the National Marine Fisheries Service stated in its 4(d) Rules for Pacific Salmon that concentrations of pesticides may affect salmonid behavior and reproductive success. Current EPA label requirements were developed in the absence of information about some of these subtle but real impacts on aquatic species such as salmonids."[iii] According to an unreleased study by the U.S. EPA's Region X, the average 70-year-old Native American in the Pacific Northwest has 50 times the cancer risk of non-Native residents of the region due to the high rate of fish consumption by tribal people, combined with the high levels of toxic chemicals found in fish tissue.[iv]

The Department of Pesticide Regulation has found triclopyr contamination in one-third of samples taken after aerial spraying by Simpson Timber Company in the Klamath watershed, indicating that the chemical does contaminate surface waters.[v] Although triclopyr is one of the most abundantly used forestry herbicides in California,[vi] potential impacts of these applications to salmon and other aquatic species are not assessed by any agency, even though the evidence indicates the potential for harm exists.

Potential Impacts to Human Health Due to Consumption of Contamination of Deer Meat

3

Herbicide use following clearcutting and other types of even-aged management has been shown to have the potential to contaminate deer meat, another major component of the diet of many Native American people. According to research conducted in Oregon, glyphosate residues in deer meat were detected at levels higher than EPA limits for meat for more than 25 days.[vii] If hunting is allowed within the JDSF, it is not unlikely that deer could move from sprayed areas to unsprayed areas, where an unsuspected hunter could kill and eat highly
14 contaminated meat.

CIBA respectfully requests that you reevaluate the JDSF DEIR and DMP with respect to
15 impacts of forestry herbicide use, Native American collecting, and species of importance to Native American culture and subsistence. Please consider these comments as significant environmental concerns raised during the review process.

16 **Please include this letter in the administrative record for the JDSF DEIS and DMP.**

Sincerely,

Jennifer Kalt

Jennifer Kalt
Resource Protection Associate
Northwestern Field Office

cc: Javier Silva, Sherwood Rancheria Tribal Environmental Program
Clare Golec, California Department of Fish and Game
Patty Clary, Californians for Alternatives to Toxics

References:

[i] Dissipation and Off-Site Movement of Forestry Herbicides in Plants of Importance to California Tribes. 2001. California Department of Pesticide Regulation, Sacramento, CA. http://www.cdpr.ca.gov/docs/emppm/pubs/ehapreps/forhrb2.pdf

[ii] U.S. Environmental Protection Agency. Prevention, Pesticides, and Toxic Substances. 1998. Reregistration Eligibilty Decision (RED): Triclopyr. Washington, D.C.

[iii] The ESA Proposed 4(d) Rules for Pacific Salmon. National Marine Fisheries Service, June 2000.

[iv] U.S. Environmental Protection Agency, unreleased report cited by NewsChannel 8, Portland, OR. February 14, 2000.

[v] Goh, K., P. Wofford, and D. Jones. 2000. Results of surface water monitoring for forestry herbicides in the Yurok aboriginal territory of the Klamath watershed, Fall 1999. Department

of Pesticide Regulation, Environmental Monitoring and Pest Management Branch, Sacramento, CA.

[vi] Pesticide Use Database, 2000. California Department of Pesticide Regulation, Sacramento, CA.

[vii] Newton, M., K. Howard, B. Kelpman, R. Danhaus, M. Lottman, and S. Dubedman. 1984. Fate of glyphosate in an Oregon forest ecosystem. *J. Agric. Food Chem.* 32:1144-1151.

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Letter JK-252 (California Indian Basketweavers Association, CIBA)

Response to Comment 252.1
The DEIR states that the potential impact that herbicide use could have on Native American plant collecting areas is less than significant with incorporation of mitigation (p. 361). Compliance with the mitigation and monitoring measures that are included in the DIER (Section 9.9.5, Mitigation Measure 15, Monitoring Measure 15, p. 361) and compliance with the DFMP and existing regulations ensures avoidance of significant potential impacts caused by the application of herbicides on Native American collecting areas.

Response to Comment 252.2
The potential impacts of herbicide use on human health were addressed in the DEIR (Section 8.4 Impacts). The results of the analysis are stated in the second paragraph on page 325.

Response to Comment 252.3
Please refer to Response GJ-236.37 and 237.68.

Response to Comment 252.4
Please refer to General Response 6.

Response to Comment 252.5
Mitigation Measures 11, 12, and 15 (Section 9.9 of the DEIR, p.359 and 361) state that CDF will coordinate with interested Tribes,

> …to determine if significant traditional cultural properties or other heritage resources such as plant collecting areas are present and may be affected. Where known site boundaries are not systematically defined or in question, establish reasonable buffer zones for heritage resources where ground disturbing maintenance activities will be avoided, and monitor for compliance.

Response to Comment 252.6
Please note that DEIR states that coordination with Tribes to identify plant populations will be done “to the extent practical” (p. 361).

Response to Comments 252.7 and 252.8
Please refer to General Response 2 and Response 252.1.

Response to Comment 252.9
Please refer to Section 9.9, Impacts Analysis and Proposed Mitigation and Monitoring Measures, of the DEIR (p.355-361). This section discusses 15 different mitigation and monitoring measures.

Response to Comments 252.10 and 252.11
Please refer to Response to Comment 252.5.

Response to Comment 252.12
Reentry periods following the use of chemicals are addressed in Section 8.2.3 of the DEIR, Regulation of Pesticides and other Hazardous Materials (p.320). Federal and State law require compliance with a pesticide's label requirements. CCR Code Section 6776 specifically states what information must be included on the posted sign. The length of time that a sign must be posted is also dictated by the chemical's label instructions.

Response to Comment 252.13
Please refer to General Response 2.

Response to Comment 252.14
Please refer to General Response 2.

Response to Comment 252.15
Please refer to responses 252.1-252.14.

Response to Comment 252.16
Your comments have been noted and have been entered into the public record.

SS RC- 254

SALMON AND STEELHEAD RECOVERY COALITION
California Council Trout Unlimited, California Trout, Inc., Coast Action Group,
Environmental Protection Information Center, Northcoast Environmental Center,
Northern California Association of River Guides,
Pacific Coast Federation of Fishermen's Associations,
Salmonid Restoration Federation, Smith River Alliance

July 17, 2002

Christopher P. Rowney, Program Manager
Demonstration State Forests
California Department of Forestry and Fire Protection
Post Office Box 944246
Sacramento, CA 94244-2460

Jackson Demonstration State Forest
Draft Management Plan and DEIR

Dear Mr. Rowney:

On behalf of the Salmon and Steelhead Recovery Coalition (SSRC) we provide the following comments regarding the Forest Management Plan (FMP) for Jackson Demonstration State Forest and the draft Environmental Impact Report (DEIR) regarding the Management Plan. The SSRC is a coalition of fisheries, restoration, and environmental organizations that has worked together since 1996 to promote recovery of salmonid species. The SSRC includes the Pacific Coast Federation of Fisherman's Associations, California Trout, Trout Unlimited, Northern California Association of River Guides, Salmonid Restoration Federation, Northcoast Environmental Center, Humboldt Watershed Council, Environmental Protection Information Center, Coast Action Group, and the Smith River Alliance.

Coho Recommended for CESA Listing

On July 28, 2000 the SSRC presented a petition to the California Fish and Game Commission (Commission) to list coho salmon north of San Francisco as an endangered species under provisions of the California Endangered Species Act (CESA). The commission referred the petition to the Department of Fish and Game (CDFG) for evaluation, which recommended the Commission accept the petition. The petition was accepted by the Commission, and on April 27, 2001 the Commission published a Notice of Findings declaring coho salmon a candidate species under CESA. After a status review conducted by the CDFG, in April 2002, the Department recommended that coho in the Southern Oregon/Northern California Evolutionarily Significant Unit (ESU) (Northern CA border to Punta Gorda) should be listed as threatened, and that coho in the Central California Coast ESU (Punta Gorda to San Francisco Bay) should be listed as

endangered. The Fish and Game Commission has scheduled a hearing on the matter for August 2002.

1 Jackson Demonstration State Forest is located in the Central California Coast ESU where CDFG has recommended that coho be listed as endangered under CESA. The DEIR does not provide this significant information.

Under CESA, state agencies have a duty to help recover endangered species. Fish and Game Code section 2053 says: "... [S]tate agencies should not approve projects as proposed which would ...result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

Section 2055 provides that: "... [I]t is the policy of this state that all state agencies, boards, and commissions shall seek to conserve endangered species and threatened species and shall utilize their authority in furtherance of the purposes of this chapter."

Section 2061 says: ""Conserve," "conserving," and "conservation" mean to use, and the use of, all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary." ...

To bring a species "to the point at which the measures provided pursuant to this chapter are no longer necessary" refers to the de-listing of a species, in other words, its recovery. We believe that in order to be in compliance with CESA, the FMP for Jackson must make a significant
2 contribution to the recovery of coho in the Central California Coast ESU. As a general rule species that are candidate for listing under CESA are afforded all CESA protections during the candidacy period. Even if the Commission chooses to defer the listing, your duty under CESA remains the same.

The DEIR has reproduced Goals and Objectives for the FMP. On Page 27, Goal #3 says: "Watershed and Ecological Processes: Promote and maintain the health, sustainability, ecological processes, and biological diversity of the Forest and watersheds during the conduct of all land management activities." Objective 3-2 says: "Maintain and recruit structural elements necessary for properly functioning habitats. In riparian areas, manage for late seral habitats, while allowing flexibility to conduct research on riparian protection zones. Create or naturally develop recovery
3 habitat for listed species." We strongly support these goals and objectives. However, we do not believe the FMP has succeeded in providing for them.

Only Public Recovery Habitat in the Region

The JDSF EIR (page 36) correctly points out that the US Forest Service has almost no forest in the redwood region and that most of the region is held as private property:

> "The Forest Service has a significant land base in all major forest ecosystem types except for coast redwoods. JDSF represents the most significant amount of acreage dedicated to

> long-term forest research. Results from research on JDSF are the best option to improve forest practices on private lands (85% of coast redwoods is in private ownership--this high percent is also unique when compared to other forest ecosystem types." [sic]

Most of the private forestland near and adjacent to Jackson is not only in private ownership, it is owned by two large timber companies that between them control almost half a million acres in the redwood region of Mendocino County. While the DEIR highlights the lack of public land in relation to the importance of JDSF's demonstration function, it fails to mention that this makes Jackson the only large forest in the area where public trust resources are not competing with private property rights issues or shareholder profits. This is a significant omission. That JDSF's resource base, including its forest stands and fish stocks, are in better shape than those on the neighboring industrial timberland reflects the longer-term view that JDSF has taken and we congratulate you for that. Your intention to continue with a relatively more conservative
4 management approach than industrial timberlands is a plus, but our review of the FMP and DEIR suggest that rather than determining habitat protection based on the needs of listed and unlisted but declining species, that the approach has been to "do a little better" than standard rules. Considering that the standard rules are so poor, we do not believe this is an adequate approach for a public agency to take in relation to public land. The additional mitigation proposed by the DEIR is a step in the right direction, but does not go nearly far enough.

NMFS Guidelines

It is not only our opinion that the standard rules are not adequate to prevent harm to listed salmonids, which is in itself a much less protective standard than contributing to recovery. On June 21, 2000, Joseph Blum, the Liaison to the State of California for the Southwest Region of the National Marine Fisheries Service (NMFS) executed a Declaration in support of Environmental Protection Information Center, et al, [plaintiffs] versus Andrea Tuttle et al, [Defendants]. (Declaration attached in full as Exhibit A.) According to the Declaration, Blum is "involved in issues pertaining to salmonid species protected under the ESA and the California Forest Practice Rules." Blum's Declaration says:

> "4. NMFS recently reviewed the California Forest Practice Rules during its reconsideration and reversal of its 1998 decision that the Northern California ESU of steelhead did not warrant listing under the ESA. (65 FR 36,074 - Northern California ESU of steelhead listed as threatened on June 7, 2000.) NMFS' review included the Board of Forestry's interim revisions to the California Forest Practice Rules which become effective July 1, 2000 (and are due to expire on December 31, 2000). NMFS concluded that the California Forest Practice Rules with the recently adopted interim changes are inadequate to protect anadromous salmonids or provide for properly functioning habitat conditions. (65 FR 36,074, 36,084-36,085.) Specifically, the California Forest Practice Rules with the interim changes lack critical elements necessary to avoid, minimize and/or mitigate adverse site-specific and cumulative watershed impacts on salmonid populations."

After discussing that NMFS was able to review less than 1% of the hundreds of Timber Harvest Plans, Blum's Declaration continues:

"6. NMFS is aware of examples where timber harvest plans which were approved by CDF as in compliance with the California Forest Practice Rules have likely resulted in the take of listed salmonids or adverse modification of their critical habitat. 99% of the timber harvest plans submitted to the CDF are never reviewed by NMFS. Considering the fact that every timber harvest plan NMFS has reviewed would likely have resulted in the take of listed salmonids or adverse modification of critical habitat without NMFS' suggested modifications, it is likely that many of the remaining 99% which NMFS has not reviewed may result in take or adverse modification of critical habitat.

"7. In my official capacity as NMFS representative, I have testified before the Board of Forestry and/or it's Interim Committee, on no less than 10 occasions and explained that the California Forest Practice Rules are inadequate to protect and conserve salmonids. I have explained that timber activities under timber harvest plans approved under the California Forest Practice Rules are resulting in the destruction of salmonid habitat and are harming listed salmonids. I have presented the Board of Forestry with guidelines for forestry that, if followed, would reduce the likelihood of harming salmonids and I have provided the Board of Forestry and CDF with approximately 100 scientific citations documenting risks to salmonids associated with timber harvest and related activities. Numerous times, before the Board of Forestry's Interim Committee and before the Board of Forestry itself, I have recommended that the Board of Forestry adopt the NMFS' Short-Term HCP Guidelines as interim rules while the Board of Forestry promulgates permanent rules that incorporate adequate salmonid protection. Further, in my official capacity, I have explained to the Board of Forestry and officials at CDF on numerous occasions that the state may be liable under the ESA for promulgating a regulatory scheme which they are fully aware results in take of listed salmonids and adverse modification of critical habitat. The only action the Board of Forestry has taken to address these issues is the adoption of the inadequate interim changes to the California Forest Practice Rules.

"Pursuant to 28 U.S.C. 1746, I declare under penalty of perjury that the following information is true and correct.
Executed this 21st day of June, 2000. in Sacramento, California.
[signed by:]
Joseph Blum"

It should be noted that the Interim [Impaired Watershed] Rules referred to in the Declaration have been re-authorized by the Board of Forestry (BOF) on a year to year basis and are currently in effect. Unfortunately, the BOF recently passed a new regulation called the Interim Watershed Mitigation Addendum rule which provides large landholders with the opportunity to avoid applying the Interim Impaired Watershed rules if a landowner's assessment provides information that can be used to justify less "stringent" standards.

It is in the context of the overwhelming extent of industrial timber holdings in the region combined with existing inadequate logging rules that we believe the managers at Jackson need to do much more than "a little bit better" than standard rules.

4

The DEIR fails to disclose that timber operations adjacent to and near JDSF have caused significant adverse effects to listed species not only historically, but in recent years and until the present time. 5 The DEIR has also failed to consider whether implementation of the FMP will combine with past and ongoing impacts on industrial forestlands to create a cumulative negative impact on listed species including, but not limited to, listed salmonids.

Throughout the FMP and DEIR, language asserts that the riparian zones will be managed to achieve late succession forest conditions. This is a laudable goal. However, the proposed standards, even with the DEIR mitigation, are not likely to achieve late succession conditions. 6 The 240 square foot conifer basal area leave standard is not adequate to guarantee a trend toward late succession conditions. 7 Some good sized trees close to the watercourse could fulfill the basal area requirement, leaving the outer part of the already-too-narrow riparian zone dependent on the 8 70% canopy cover standard. As written, that canopy need not consist of conifers. Without designation of conifers and hardwoods that will be allowed to grow old, die, and decompose as they would in a natural forest, and without specific requirements for conifer distribution and dense understory retention, it is highly unlikely that the riparian area will develop the complex condition that is characteristic of late succession forest.

The size of the riparian zones will also prevent development of late succession conditions. First, 9 the size of the Class II Watercourse and Lake Protection Zones (WLPZs) can vary between 50 and 100 feet and there is no information about the conditions that will trigger these varying numbers. Establishing a dark, moist, and cool zone in a 100-foot strip is not feasible. In a 50-foot strip, roughly the length of a small house trailer, achieving these conditions is even more improbable.

10 It is impossible to tell from the documents when the DEIR mitigation for large woody debris (LWD) will be applied as 100 feet or 150 feet. No standards are set. The DEIR makes it clear that the LWD mitigation, regardless of size will only apply to certain stream reaches and not across the forest. Even with the 150 foot mitigation standard applied *everywhere*, the FMP and DEIR WLPZ standard falls considerably short of the NMFS recommendations for streamside measures that avoid "take" (harm, harass, kill) of listed salmonids. This "no take" standard itself is *not* a recovery standard.

As the NMFS Declaration makes clear, they have provided specific guidance supported by numerous scientific references. These were presented to the Board of Forestry on December 3, 1999. (attached as Exhibit B) They recommend the following Aquatic Protection and Management Zones (emphasis added):

For *both* Class I and Class II waters:

> "The outer APZ boundary will be delineated and marked on the ground equal to one site-potential tree height, 180 feet, 50 feet beyond the break in slope at the top of the inner gorge, 50 feet beyond the upper extent of any unstable area that extends down to within 180 feet of a Class I or II water or 50 feet beyond the break in slope for all slopes 50% or greater adjacent to the APZ, whichever of these distances is *greater*....

5

"All distances are measured horizontally from the edge of the channel migration zone (CMZ), if one exists, or from the outer edge of the bankfull channel on each side of the waters.

"Timber operations or other management activities *will not be conducted*, except road-related activities, as described below, within this APZ and within the adjacent bankfull channel. The following restrictions apply within APZs [partial list]:

- "Equipment exclusion zone (EEZ)
- "No salvage....
- "No burning or mechanical site preparation ....
- "If ground-based yarding will be used on slopes greater than 50% adjacent to the APZ, or if roads are within 100 feet of an APZ, the EEZ will be increased by 100 feet, measured horizontally from the outer edge of the APZ."

11 The FMP and DEIR virtually ignore Class III watercourses even though these have been repeatedly shown to be very significant sources of sediment into Class I and II watercourses. The NMFS guidance document makes the following specific recommendations:

For Class III waters:

"The outer AMZ boundary will be delineated and marked on the ground equal to 100 feet, up to the break in slope for slopes that exceed 50%, or 50 feet beyond the upper extent of any unstable area that extends down to within 100 feet of a Class III water, whichever of these three distances is *greater*....

"This AMZ may be partially entered for timber management purposes.

"Within all Class III water AMZs, the first 30 feet closest to the channel, or 50 feet beyond the upper extent of any unstable area that extends down to within 30 feet of a Class III water, whichever distance is greater, will be delineated and marked on the ground. Timber harvest or other management activities will not be conducted except road-related activities as described, within this inner buffer.

"Between the inner 30 feet buffer closest to the channel and the outer AMZ boundary, the following management restrictions apply:

- "The conifer basal area will not be reduced to less than 50% of the potential of a fully stocked stand.... No harvest within the AMZ will occur except concurrent with commercial thinning or single tree selection in adjacent stands and under the same timber harvest plan, immediately after which, at least 100 square feet basal area per acre will be retained in these adjacent stands.

- "Equipment exclusion zone (EEZ).

- "No Salvage....

6

- "No burning or mechanical site preparation....
- "If ground-based yarding will be used on slopes greater than 50% adjacent to the AMZ, or if roads are within 100 feet of an AMZ, the EEZ will be increased by 100 feet...."

In other words, the NMFS recommends protection measures for Class III watercourses that are more protective than what the FMP and DEIR propose for Class II. The NMFS document provides guidance on additional subjects as well. Please refer to the attachment (Exhibit B) for a more complete review.

12 It cannot be emphasized enough that the NMFS standards were developed specifically *for application on private land* as regulated by the California Board of Forestry, although they would apply at Jackson if they were in place as state regulations. Presumably, public land should be treated *more protectively*.

A riparian strategy that was conceived with public lands in mind is published as the Aquatic Conservation Strategy of the *Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl*, adopted in April 1994 by the US Forest Service, and the Bureau of Land Management and their parent agencies. This strategy is generally more protective than the NMFS guidance document. The latter was designed only in relation to the needs of listed salmonids. The US Forest Service standard was designed as a multi-species approach for managed timberland. Its recommendations apply to the same eco-region as Jackson and are the most appropriate, comprehensive, and well-researched guidance document of its kind.

Without going into these standards at great length, we will nevertheless point out that for Class I streams, the riparian management zone is recommended to be at least two site potential trees heights in width, with management limited to advancement of late succession conditions. As much of the Western, Northern, and Southern Watershed Assessment Areas within JDSF are Site II, according to the California Forestry Handbook, each site potential tree height would be approximately 180 feet. Therefore the riparian management zone for Class I streams would be a minimum of 360 feet on each side of the stream under this US Forest Service standard.

Why should we do less at Jackson?

13 Based on the well-researched recommendations of the NMFS, the US Forest Service, and the Bureau of Land Management and their parent agencies, we believe that the FMP as mitigated by the DEIR would, at a minimum, cause significant adverse impacts to water temperature, sedimentation, large woody debris recruitment to Class II and Class III streams, channel geomorphology, and riparian habitat. Additionally, based on the above-referenced federal recommendations, we believe that the FMP as mitigated by the DEIR is highly likely to reduce the number or restrict the range of coho salmon, a listed species. The DEIR has incorrectly identified the implementation of the FMP regarding all of the above to be "less than significant" or "less than significant with mitigation." We disagree.

We support implementation of the US Forest Service Aquatic Conservation Strategy as articulated in the *Standards and Guidelines,* referred to previously, as the best means for JDSF to comply with its mandate under CESA to make a significant contribution to the recovery of coho salmon, a candidate (perhaps soon to be listed) endangered species.

Additional Concerns

There are additional flaws in the FMP and DEIR, including missing or incomplete information and failure to identify significant adverse impacts. We will touch on only a few of them, and briefly.

It is impossible to determine from the information provided, how much late succession forest currently exists at Jackson, where it is located, and how much of that forest is likely to be eliminated by the proposed timber management plan. The DEIR Vegetation Class Map (Figure F) does not include a category that is a reasonable surrogate for late succession forest. Redwood
14 trees greater than 18" (the largest class mapped) could include trees as young as 50 years of age on both Site II and Site III lands, the overwhelming majority of Jackson. The DEIR glossary definition of late succession forest indicates that the youngest tree that would fit the definition would have reached culmination of mean annual increment, i.e. maturity. Although there is a wide variation among sites and conditions, we know of no likely-to-occur site or condition that would lead a stand of coast redwood trees to be categorized as mature at 50 years. Eighty to 100 years is often sighted as the absolute minimum age of maturity for this species, with individual trees that can and do survive for 2000 years. Given the emphasis that the FMP claims to place on late succession forest, these omissions are significant.

A comparison of the DEIR Vegetation Management Class Map with the Special Concern Areas Map (Figure H) leads us to conclude that the majority of the existing older second growth forest, that which is most likely to mature into late succession forest soonest, is designated to be logged. This is not discussed in the DEIR and is a significant omission. If our conclusion is correct, given
15 the lack of mature forests in the Mendocino County region, eliminating more than a very small number of the oldest second growth trees at Jackson would be a significant adverse impact both in and of itself and in combination with past and reasonably foreseeable Timber Harvest Plans (THPs) on adjacent and nearby industrial timberland. THPs, state permits to log, are recognized as projects under the California Environmental Quality Act.

The Vegetation Map is unhelpful in many ways. Markings for watercourses and roads that could help orient the reader stop outside the boundary of the forest, leaving this map a featureless
16 mosaic of color. We have done our best to understand what forest stands are planned for logging by doing a side by side comparison of Figure F and Figure G. Given the quality of mapping that is generally available in other environmental documents, the mapping of crucial issues in this DEIR is extremely poor by comparison

The old growth retention policy seems to indicate that some old growth trees will be cut if they
17 are inconvenient for planned timber operations. Old growth trees are a non-renewable resource and their elimination for the sake of convenience is a significant adverse impact that is not identified as such in the DEIR. We recognize that occasionally a particular tree is such a hazard to human life as to potentially require removal. In the rare instance where this would be true, we

recommend determining whether topping the tree to create a snag would eliminate the hazard instead. Only as a last resort should an old growth tree be removed. Every old growth tree should be granted a buffer from timber operations that might damage it, or better yet, aggregated with others nearby into a late succession development area.

It would have been helpful if the DEIR was explicit about staffing at Jackson. The DEIR makes many promises about how the forest is to be managed, but there is no way to assess whether
18 staffing at Jackson is adequate to implement the plan. For instance, we notice that the Department of Fish and Game has pointed out in its letter to you during the scoping period (DEIR Appendix) that Jackson does not have a staff biologist. If this is still true, we believe it is highly likely that the goals and objectives of the FMP will not be properly implemented.

Conclusion

It is in the nature of reviewing a Draft Environmental Impact Report to focus on the negative. In spite of our remarks here, we wish to again recognize the managers of Jackson Demonstration State Forest for the effort that has been expended on putting together the new Forest Management Plan. It is clear that a lot of thought has gone into important aspects of the plan. In conclusion, we urge you to continue your efforts by increasing your focus on demonstrating forest management that promotes the survival and recovery of species that depend on older forests, including salmonid species.

Sincerely,

Zeke Grader, Executive Director
Pacific Coast Federation of Fisherman's Associations

Tom Weseloh, Northern California Manager
California Trout

Stan Griffin, Northern California President
Trout Unlimited

Cynthia Elkins, Program Director
Environmental Protection Information Center

Craig Bell, Representative
Northern California Association of River Guides

Traci Thiele, Representative
Humboldt Watershed Council

Joshua Israel, President
Salmonid Restoration Federation

Alan Levine, Director
Coast Action Group

Tim McKay, Director
Northcoast Environmental Center

Larry Smith, Representative
Smith River Alliance

Exhibits Attached

Letter SSRC-254 (Salmon and Steelhead Recovery Coalition)

Response to Comment 254.1
Thank you for pointing out the oversight. The paragraph 2 on page 107 of the EIR should be revised to include the following: "The California Department of Fish and Game has conducted a status review of coho salmon in the California Central Coast Evolutionarily Significant Unit and has recommended the species be listed as endangered under CESA."

Response to Comment 254.2
The DFMP will not jeopardize the continued existence of coho salmon in the Central California Coast ESU. The coho habitat on JDSF has been on a recovery trend under standard FPR and 1983 FMP. That should continue under the DFMP.

Coho habitat on JDSF is already on a recovery trend (see response to comment 13). CESA doesn't mandate how fast recovery has to occur. However, since recovery has been occurring under the 1983 FMP and standard FPR, the implementation of the DFMP goals and mitigations should maintain or accelerate the trend.

Section 2052.1 says, "…***measures or alternatives required shall be roughly proportional in extent to any impact on those species that is caused by that person***." JDSF is not responsible under CESA to contribute to recovery of coho beyond the forest boundaries or to act as a mitigation bank for private landowners.

Response to Comment 254.3
Please refer to General Response 1.

Response to Comment 254.4
Please refer to General Response 2.

Response to Comment 254.5
Please refer to General Response 9.

Response to Comment 254.6
The 240 sq. ft. per acre of conifer basal area is the minimum basal area requirement for all Class I and II WLPZs, and is one component of riparian management zones. It is also likely that more conifer basal area will be retained within the Class I and II WLPZs due to the minimum 85% and 70% overstory canopy retention standards. In addition, in Class I WLPZs adjacent to watercourses that do not meet LWD target levels, silviculture will be limited to "thin from below" or no-cut. When stands are thinned from below, most of the codominant, dominant, and predominant trees are retained. Under a no-cut alternative, no trees will be taken. The retention of hardwood species as per FPR 916.5 that states the stand configuration will contain the diversity of species similar to that found prior to operations, and the requirement of the DFMP to retain native hardwoods in the WLPZ will add non-conifer basal area.

A late seral condition can be characterized by a multi-layered, multi-aged stand structure containing a wide diversity of age classes and diameters. Achievement of late seral conditions in WLPZs is a stated goal of the DFMP. This will be achieved by implementation of the operational prescriptions found in the DFMP. Uneven-aged or no-cut management combined with the 240 sq. ft. and retention of at least 85% and 70% (inner and outer band respectively) of the overstory canopy will result in most if not all of the dominant, codominant, and predominant trees remaining on site and insure a multi-layered stand of varying ages and diameters. The basal area standard stated in the DFMP is a minimum only. It can be expected that this standard will be exceeded in many instances, just as it was before the DFMP was implemented.

Response to Comment 254.7
The described management method is not allowed under the proposed standards. The outer part of the WLPZ is also covered under the high basal area retention requirement. The standard is read as a minimum of 240 sq. ft. per acre of conifer basal area and either 85% or 70% overstory canopy retention depending on location within the WLPZ. These two standards in combination will provide for high canopy closure and high conifer basal area retention.

Response to Comment 254.8
It is true that the overstory canopy requirement did not specifically require conifers. However the 240 sq. ft per acre of conifer basal area retention requirement and 10 largest conifers retention standard insures that conifers make up a large portion of the retained canopy. In addition, conifers are by far the dominant overstory species (84% of the vegetation types) on the JDSF with only 12% of the forest, mostly in the eastern portion, having a significant mixed conifer/hardwood or hardwood overstory component.

Response to Comment 254.9
The 50- to 100-foot Class II WLPZ widths are minimum standards that can be expanded depending on site conditions. The WLPZ width designation is based on the sideslope as defined in Section 916.5 of the FPRs.

Response to Comment 254.10
No standard was developed to mandate when the 100- or 150-foot width was implemented to allow for flexibility when testing of different WLPZ width and silviculture prescriptions that conform to the LWD mitigation. This flexibility will allow the JDSF to develop riparian retention experiments as per the demonstration mission of the forest. The mitigation was designed to recognize that many streams (some 1st order Class I and Class II watercourses) on JDSF already contain properly functioning amounts of LWD.

Response to Comment 254.11
Class III watercourse-specific concerns will be addressed at the project level during THP preparation. 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 watercourses.

Response to Comment 254.12
The NMFS Short-term HCP Guidelines were developed specifically for the Fruitgrowers Supply property in northeastern California with the idea that each THP on that private property would utilize clear-cut silviculture. The JDSF will be using uneven-aged or late seral development management on approximately two-thirds of the forest with the goal to develop multi-layered and multi-aged stands. Even-aged silviculture methods will be used on less than one-third of the property. JDSF will implement standards that are developed on a site-specific basis depending upon the local conditions. As stated in the DFMP, the intent of protection measures will be to allow the aquatic system to continue to recover and to maintain or develop properly functioning ecosystem processes. In no case will the standards applied be lower than those minimums stated in the DFMP.

Response to Comment 254.13
Instream habitat for salmonids has been on a recovery trend as seen in improvements in overstream canopy closure, V* measurements, reductions in the percentages of fine sediment in spawning gravel, and increases in pool depths. These improvements have occurred while the JDSF was operating under the 1983 management plan and standard FPR. The current DFMP, which contains many protection measures that exceed the FPR, will not retard this recovery trend and will likely enhance it. Measures that contribute to the recovery trend include, but are not limited to: 1) the Road Management Plan that will significantly decrease sediment delivery from roads and eliminate salmonid migration barriers; 2) no-cut zones on all Class I and II watercourses; 3) basal area and canopy retention standards that exceed FPR; 4) no-cut or "thin from below" silviculture to enhance the development of large trees along fishbearing watercourses where LWD loads do not meet target levels; 5) development of late seral forest conditions within the WLPZs and other special concern areas; 6) use of uneven-aged or late seral development management on about two-thirds of the forest to develop a multi-layered stand; and 7) use of a Certified Engineering Geologist during THP design as per the guidelines stated in the DEIR. See the DFMP and DEIR for other protection and mitigation measures. It is reasonable and logical to conclude that improving habitat conditions and implementation of measures that could accelerate recovery trends would not result in significant impacts or decrease the range of a species.

Response to Comment 254.14
Late seral forest habitat is discussed extensively in the wildlife section of the DEIR. Late seral forest development is also discussed in the Timber section of the DEIR. A detailed discussion of the vegetation classification systems used on JDSF is included in Appendix 8, including the methods used to interpret from the JDSF vegetation typing system to the CWHR system. During the DEIR analysis, a determination was made that the available data and methods used could accurately estimate the amount of various CWHR types present within JDSF, but not in a spatially explicit manner. In other words, the acres of a given CWHR type can be accurately estimated, but the location of the types cannot be accurately delineated. This level of accuracy is appropriate for the level of analysis conducted for a landscape level program DEIR.

More detailed site-specific analysis is completed on a THP level for individual timber harvest projects. The FPRs differentiate between late seral and late succession forest. The definitions

used for late seral and late successional are different, but may overlap. The Rules require RPFs to provide detailed habitat structure information when late succession forests are proposed for harvest. Feasible mitigation measures to mitigate or avoid long term significant adverse effects to fish, wildlife and listed species that are primarily associated with late successional habitat need to be incorporated into such THPs. If these effects cannot be avoided or mitigated, a statement of overriding concerns needs to be included for consideration. A waiver of these requirements may be requested in a THP where substantial evidence is presented that would support a determination that post-harvest late successional forest stands or functional forest habitat will avoid or mitigate long term adverse effects within the planning watersheds. Impacts to late seral forest are assessed separately as part of the THP required Cumulative Impacts Analysis.

Response to Comment 254.15
The location of known old growth forest is depicted on figures within the DFMP. This forest will not be harvested. Selected groves will be augmented with second-growth forest designated for recruitment of late seral conditions. Any proposal to harvest within stands that meet the definition of late successional forest, as defined by the Board of Forestry, must include a detailed analysis of potential impacts. "Mature forest" is not defined. Any proposal to commercially harvest timber stands of any age is accompanied by an assessment of individual and cumulative impacts (see FPR). Anticipated harvests within the next five years will include second-growth forest with trees of similar or differing ages. Please refer to response WW-237.1

Response to Comment 254.16
Many variations of the maps and the map configurations and layouts were developed and evaluated prior to creation of the DEIR Figures. Roads and streams were initially included on maps such as Figure F, but the additional detail tended to detract from, or obscure the information presented. After viewing several versions, it was determined that the Forest boundaries and interior WWAA boundaries provided sufficient orientation and did not obscure the information presented in the Figure.

Response to Comment 254.17
All commercial timber harvest plans will include an assessment of potential environmental effects. As described in the DFMP and assessed in the DEIR, all old growth groves and old growth aggregations will be retained, and individual old-growth trees will be retained. Certain old-growth groves will be augmented to enhance size and function as specified in the DFMP. The DEIR found that the potential for removing a limited number of individual old growth trees did not represent a significant environmental impact. Allowing the Forest the flexibility to remove old growth trees in limited cases as presented in the DFMP will allow for the protection of other resources such as water quality. As discussed in the DEIR, the proper design and location of roads and landings is critical to minimize sediment delivery to watercourses. Road and landing location is also critical for cable yarding systems to function with a minimum of impact. Minor changes in road or landing location to avoid a particular tree has the potential to result in long-term sediment production. In addition, please refer to General Response 1 and 2. The old growth trees within JDSF are surrounded by forest in various stages of development and management. Specific buffers for individual trees are not warranted.

Response to Comment 254.18
A discussion on Current JDSF staffing and budget in included on page 39 and 40 of the DFMP. JDSF will be responsible for managing the Forest as per the approved management plan and Final EIR, as well as compliance with all other applicable laws and regulations, regardless of the available staff or budget. Based on the current condition of the Forest and the staff and budget outlined, the management practices and mitigation measures included in the DFMP and DEIR appear to be feasible as required by CEQA.

HB-255

SIERRA CLUB
CALIFORNIA

July 18, 2002

Christopher P. Rowney, Program Manager
Demonstration State Forests
California Department of Forestry and Fire Protection
Post Office Box 944246
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Jackson Demonstration State Forest
Draft Management Plan and DEIR

Dear Mr. Rowney:

On behalf of Sierra Club's members in California, I thank you for the opportunity to comment on the Jackson Demonstration State Forest (JDSF) Management Plan (FMP) and the draft Environmental Impact Report (DEIR) on the Plan. We congratulate you on reaching this milestone. The FMP is a significant improvement over the 1983 Plan that it replaces.

These comments are made from the backdrop of my experience in Mendocino County where Jackson Forest is located. I have lived here since 1971 and have been active on forest related issues off and on since 1976. In response to my concern about the unsustainable pace of logging in my area, in 1988 I helped found the organization Forests Forever. In 1990 I was on the state steering committee for Proposition 130, the Forests Forever voter initiative, which proposed a major reform of forest practice rules to provide sustained production of timber while protecting the environment. The Initiative also proposed a multi-million dollar bond for purchase of Headwaters Forest and other ancient forests throughout California. Unfortunately, in the face of a $13 million campaign by the timber industry, the measure failed with a 48.7% yes vote.

In 1992, I began representing Sierra Club California regarding state-regulated forestry issues, and was until my "retirement" last year, the Forest Conservation Chair for California. In that position I was Sierra Club California's principle spokesperson regarding Headwaters Forest. I also represented Sierra Club in relation to the Board of Forestry regarding Forest Practice Rules and other matters, and was appointed by former Resources Secretary Douglas Wheeler to the Coastal Salmon Initiative Policy Panel. I have presented testimony to the California Legislature on a number of occasions and have been the Sierra Club liaison regarding forest-related litigation. I have reviewed and commented on numerous Timber Harvest Plans (THPs), including the two JDSF plans that are currently enjoined from operation by the court

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pending approval of the new FMP, and the other Jackson THP that has completed the review process but has not yet been approved.

In 1996, I began following management at Jackson when a series of protests and arrests brought the public's concerns to my attention. I advocated with former CDF Director Richard Wilson for the creation of the Citizens Advisory Committee that ultimately met for more than a year and produced a report and recommendations that are now being considered as Alternative D in the DEIR, an alternative that is not the preferred alternative. I was not a member of the CAC, but did attend a number of its meetings. After the new administration failed to implement those recommendations and additional THPs continued to be proposed, in 1999 I sent a letter to CDF Director Andrea Tuttle on behalf of Sierra Club asking that THP approval be put on hold until a new management plan update was completed. I also raised this issue with the Board of Forestry. Director Tuttle created a State Forest Advisory Committee and appointed me as a member. However it was not until the newly formed Campaign to Restore Jackson Redwood Forest took CDF to court in 2001 that the draft Management Plan was released. The Campaign subsequently won an injunction prohibiting operation of any THP prior to approval of the new FMP. Although Sierra Club is not active with the Campaign, I believe their litigation was a key factor in CDF releasing the FMP. Even so, it has taken another year to reach the point of this DEIR review.

Throughout the course of my forest conservation activities I have been, and remain, a volunteer.

The New Orientation

It was a relief to see the statement on page 3 of the Forest Management Plan:

> "This plan builds on the 1983 plan by elevating wildlife, watersheds, and ecosystem processes to a level of importance equivalent to the timber management and the research, demonstration and education programs." [Also at DEIR page 261]

This statement provides a context that makes progress possible and resolution of many conflicts achievable.

Regional Context and Older Forests

Decisions about management at Jackson must take into account several important factors that have not been adequately considered by the DEIR. Central among these is Jackson's unique ecological importance within the redwood region. It is by far the largest bloc of public coast redwood forestland north of San Francisco and south of Humboldt County. It also contains much of the remaining significant stands of mature second growth forest in that same region. It is by far the largest single block of public land in the redwood

region of Mendocino County and all of Sonoma County, an area of burgeoning population growth.

There is a good map in the FMP, Figure 2, Regional Forestland Ownership, illustrating the lack of public land in the redwood region. It shows the huge imbalance in public land ownership among the various regions of California north of Monterey Bay. Beginning on the eastern fringe of Mendocino County, in the hot, high, and dry Douglas fir forests stretching north into Humboldt, Trinity, and Del Norte Counties are large swaths of US Forest Service land. Even in the north, it is not until around Eureka that these Forest Service lands extend to within 50 miles of the coast into the range of the redwood forest. On the Sierra side of the state, large tracts of US Forest Service lands provide a range of protection for the Sierran Pine and Fir forests ranging from wilderness to commercial timber production. These Forest Service lands are also among the most heavily used recreation areas in California, if not the nation.

Yet looking toward the redwood region north of San Francisco, there is only one public forest of any size south of Humboldt County, and that is Jackson Demonstration State Forest. Even in Humboldt County there are only two public forests of similar size in the redwood forest type, the King Range National Conservation Area (which is actually dominated by Douglas fir, not redwood) and Humboldt Redwoods State Park. Thus, Jackson is one of only three large public forests in the redwood region south of Eureka and north of San Francisco. All three of these forests combined are something less than 150,000 acres total embedded in millions of acres of industrial timberlands in the redwood region.

The DEIR acknowledges on page 36 that:

> "The Forest Service has a significant land base in all major forest ecosystem types except for coast redwoods. JDSF represents the most significant amount of acreage dedicated to long-term forest research. Results from research on JDSF are the best option to improve forest practices on private lands (85% of coast redwoods is in private ownership--this high percent is also unique when compared to other forest ecosystem types." [sic]

1 However, the DEIR should have included the Figure 2 map from the FMP to illustrate the regional imbalance of private and public lands. The DEIR does not discuss the ecological implications of this imbalance. It focuses solely on the aspect of research opportunities. Failure to consider the full range of implications is a significant omission of the DEIR.

Large industrial timber companies dominate coastal forestland ownership in Mendocino County, and smaller private timber owners, many of whom engage in commercial logging, dominate the forested area of Sonoma County. Timber operations in these counties have eliminated almost all old growth forest, and in the past decade have dramatically reduced stands of mature second growth

forest. Old growth and mature first or second growth forest stands are collectively referred to in the DEIR as late successional (or late seral) forest.

2 Although the DEIR does not disclose this at all, the older second growth forest stands at Jackson are highly likely to be among the largest blocs of such forest in Mendocino County. This is important environmental information that should have been included in the "Surrounding Land Use" section of the Setting information (DEIR page 54). One of the key areas of concern about Jackson has been and continues to be the fate of the oldest second growth redwood stands. According to JDSF Manager Marc Jameson, there are 10-12,000 acres of 80-110 year old second growth forest mostly on the west side of Jackson.[1]

3 Additionally, the previous elimination by logging of most late successional forest and older second growth stands in the region should have been considered as one of the known significant adverse impacts from past projects when conducting a cumulative impacts analysis. Logging is a "project" under the California Environmental Quality Act (CEQA). Timber Harvest Plans (THPs) are logging permits that are certified by the Resources Secretary as functionally equivalent to an EIR. These THPs are reviewed and approved by the CDF, so these past projects are well known to the Department. Amazingly, no cumulative impact analysis has been done for the Jackson DEIR. As the guidelines for the California Environmental Quality Act (CEQA) encourage cumulative impact analysis as appropriate at the programmatic EIR stage, the lack of this analysis is a significant shortcoming in the DEIR.

We have commissioned a map to illustrate the proximity and extent of industrial timberland ownership in the vicinity of Jackson Forest and in Mendocino County. (Exhibit A) It shows that JDSF is bounded on both north and south almost exclusively by two large industrial timberland owners, Hawthorne Timber LLC (Hawthorne) on the west end of JDSF, and Mendocino Redwood Company (MRC) on the east. Their ownerships extend far to the north and south of Jackson. Both of these companies are relatively new owners, being successors to two large companies that operate internationally: Georgia-Pacific (now Hawthorne) and Louisiana Pacific (now MRC). G-P and LP mercilessly over-logged their lands, culminating in the 1990s with the virtual elimination of older second growth redwoods (stands exceeding 60 years of age in a region where trees will live to be 2000 years old) on their lands. During this now infamous period, CDF approved thousands of Timber Harvest Plans and concluded that each individually and cumulatively resulted in no significant adverse impact to the environment. Yet during this same period, ever increasing numbers of species such as coho salmon, marbled murrelets, and steelhead trout were listed as threatened or endangered by both the state and federal governments and most of the streams in the area were listed as impaired under Section 303d of the Clean Water Act including both the Big

[1] State Forest Advisory Committee meeting, April 5, 2002 in response to my question.

4A River and the Noyo River, major watersheds in JDSF. *Each of these listings* cited poor California Forest Practice Rules and effects of logging as either primary or significant factors in the listing. The absence of information regarding this environmental setting is a significant omission of the DEIR.

Attached are excerpts from the Hawthorne Option A[2] [Exhibit B] and the MRC Option A[3] [Exhibit C] that verify the loss of older forests in the County. The Option A is a document that complies with California Forest Practice Rules requiring demonstration of sustained timber production. According to the Hawthorne Option A, they had a standing inventory of 2.1 billion board feet (bbf) with 191,581 acres considered as the "timber management" area. This calculates to an average stocking volume of 10,900 board feet per acre.

According to the California Forestry Handbook (page 215)) [Exhibit D] a low site class II (site index 160) fully stocked redwood stand *at 20 years of age* would have 7000 board feet per acre, not much less than the Hawthorne average. At 30 years it would be expected to have 19,600 board feet. Obviously, the Hawthorne age estimate is an average--some of their acreage would have a higher level of stocking and an older stand age, but some would be even younger.

The former LP lands are generally considered to have lower timber volumes than the former G-P lands and this is born out by the MRC Option A, submitted February 29, 2000. With 232,000 acres, they had a standing conifer inventory of 2,264,700 mbf (ie ~2.27 billion bf) which comes to an average conifer volume per acre of 9,762 board feet. Again, according to the California Forestry Handbook, Lindquist and Palley (1963) yield table, a Site Index 160 stand, similar to what would be expected in the coastal areas of MRC holdings, would have 152,300 board feet per acre at 100 years. These figures demonstrate that the forests surrounding JDSF are very young and are likely to provide, in abundance, the sort of habitat typical of young forests. They are not at all likely to provide older second growth habitat, not to mention either the mature or old growth components of late successional forest.

The FMP indicates: "Some of the densest and highest volume stands of second-growth timber in the redwood region can be observed on JDSF." (FMP page 1) According to the DEIR the standing timber volume is roughly 2 billion board feet on the ~ 50,000 acres. (DEIR page 31) Without accounting for constrained areas, this calculates to an average ~ 40,000 board feet per acre, more than four times the stocking volume on the former LP lands. Using the same Site Index 160 as was used for the preceding analysis, the average age is somewhat older than 40 years. These numbers provide a very coarse grained analysis. We do not mean to indicate that this methodology provides a clear picture of

[2] Hawthorne Timber Company, LLC. Option A. March 6, 2000
[3] Mendocino Redwood Company. Option A. February 29, 2000

specific stand ages on these forest ownerships, only the relative age of their stand averages.

Also attached as Exhibits E and F are two 2001 Landsat images. One is tightly focused on JDSF, and the other expands the view to include adjacent industrial timberlands directly to the north and south. The second clearly shows the general absence on neighboring forestlands of the dark green that indicates an older, more dense forest. The areas to the north and south corresponding to the former G-P lands show a vast network of white clearcut areas in an expanse of very light green young trees.[4] The areas more to the east show the different approach generally taken by LP: rather than clearcuts, even-aged management was used to remove the large trees, leaving the younger ones in place. We note a disturbing similarity to some of the G-P lands on
46 JDSF north of Parlin Fork. The network of clearcuts and heavy canopy removals are a striking image of the sort of logging the public has long been asking JDSF to discontinue.

On one hand, all of this indicates that JDSF has obviously been doing better than its industrial neighbors. On the other, it demonstrates that JDSF's older forest stands are unique to the region. If we are to have older forests here, and the plants, fish, birds, wildlife, and other forms of life these forests support, we are going to have to have them at Jackson because they are already gone on the industrial lands.

5 These are the sort of issues the DEIR should have discussed when describing the JDSF setting and the environmental context of the project. The DEIR should have provided the images that would help the public to understand the context of the project. The DEIR should have, but didn't, consider that by logging most of the existing older stands as proposed, the FMP project is likely
6 to combine with past, present, and foreseeable future projects on adjacent timberlands to create an adverse cumulative impact on older second growth forests, late successional forests, and the species of flora and fauna that
7 depend on these forests. These adverse impacts also extend to the aesthetic and recreation interests of the public.

Older Forests and Late Successional Forests

> "The availability of late-successional/ old-growth forest habitat is a concern because of its value as wildlife habitat and the substantial reduction in this forest seral stage that has occurred throughout Pacific Northwest over the last 150 years." [sic] (DEIR page 216)

[4] A few of the openings to the south of JDSF between Big and Little River and to the south are ridgetop meadows not associated with recent logging.

What is meant by the term late successional forest (synonymous with late seral forest) is a key concept for the JDSF FMP and DEIR. It is imperative to recognize that this term is NOT synonymous with "old growth" forest. Rather, "old growth" is a subset of late succession. "Mature forest" is the second component. Collectively, these two stages in forest development are called late successional forest. The DEIR Glossary (Appendix) correctly recognizes this when it defines this term: "The stage in forest development that includes mature and old-growth forest." Neither the FMP nor the DEIR ever refers to the DEIR Glossary definition. Rather a number of surrogates are used. None of the surrogates are as accurate as the Glossary definition. As these surrogates are used throughout both documents, however, it will be necessary to refer to them and discuss the documents in those terms.

8 The DEIR does not adequately explain the importance of late successional forest. What discussion there is centers around the "old growth" component. Without understanding the ecological importance of the "mature forest" component of late successional forest, the public's concern for Jackson's older second growth stands will be wrongly relegated to the spheres of aesthetics and recreation. Older forests younger than-old growth are a crucial biological resource well prior to their attaining true old-growth characteristics.

The federal FEMAT Report[5], which is specifically about the Pacific Coast region says: [page IV-20]

> In the current assessment, we reviewed and updated the list of species associated with old forests. Criteria based on those developed by Thomas et al. (1993) were used for this effort (see section on identification of species closely-associated with late-successional forests). The number of species identified is greater than that shown by Thomas et al. because of new information and because this report focuses on all federal late-successional forests within the range of the northern spotted owl rather than just the old-growth component on National Forests. A total of 1,098 terrestrial species (not counting arthropods) are identified as closely associated with late-successional forests on federal lands...."

9 Other than in relation to old growth, no specific information is provided in the FMP, DEIR, or the maps regarding the total acreage or location of forest stands that are non-old-growth, but nevertheless, late successional stands. This is a significant omission.

The DEIR acknowledges that the California Wildlife Habitat Relationship (CWHR) system is not an adequate descriptor for late successional forest: "Old-growth forests and late successional forest as defined by the FPR [Forest

[5] USDA Forest Service, USDOC National Marine Fisheries Service, USDOI Bureau of Land Management, USDOI Fish and Wildlife Service, USDOI National Park Service, Environmental Protection Agency. *Report of the Forest Ecosystem Management Assessment Team.* July 1993.

Practice Rules] are not well represented by the CWHR classification system." (DEIR page 217) We agree. Nevertheless, the CWHR system is one of the late successional surrogates used by the DEIR. According to DEIR page 218:

> "[A]creage of CWHR stands 5M, 5D, and 6 represent the maximum availability of late successional forest habitat on JDSF. More detailed information on the structure and composition of individual timber stands classified as 5M, 5D, or 6 could reveal that some of these stands do not have the characteristics necessary to function as late-successional forest habitat. Old-growth stands are a subset of those classified as CWHR 5M, 5D, or 6. Designation of a stand as old-growth or late successional requires an evaluation of individual characteristics, such as the stands age, structural characteristics, and harvest history."

Table 32 on DEIR page 216 indicates that Jackson has the following acreage in redwood forest type CWHR categories:

5M =	5,989 acres
5D =	627
6 =	9,444
TOTAL =	16,060 acres

As the DEIR says, this figure represents "the maximum availability of late successional forest habitat on JDSF." Even if one or more late successional characteristics are absent from these stands, they are nevertheless going to represent the closest to late successional forest structure available at JDSF.
10 With the exception of the 459 acres of old growth (DEIR page 218), the location of these stands as categorized by the CWHR system, are not mapped in either the FMP or the DEIR. This is a significant omission. Without this information we cannot tell how much of this important habitat will be retained and how much will be logged over the life of the FMP. Based on the analysis to follow, it appears that most of this acreage is designated for logging.

There is a mind-numbing explanation in Appendix 8A 2-6 of the relationship between the CWHR system and the JDSF Vegetation Classification System. This is important to understand because the vegetation maps in the FMP and DEIR are both derived from the JDSF Vegetation System. The first time I attempted to understand this "crosswalk" between the two systems, I concluded I must have misunderstood something because it seemed so unwise to take a well-known system like CWHR and convert CWHR Size Class 5, with trees greater than 24" diameter at breast height (dbh) and call it Size Class 6 in the relatively obscure JDSF system. Doing such a thing would be an open invitation to absolute confusion. I asked a Registered Professional Forester to review the crosswalk and assist me with understanding it. He characterized the crosswalk as confusing.

Another review on my part has led me to conclude that the JDSF Vegetation Type does, indeed, take CWHR size class 4 (18-24" dbh) and call it JDSF Size

Class 5; WHR Size 5 (over 24"dbh) and call it JDSF size 6; and does not crosswalk with CWHR Size 6. Perhaps in some belated effort at clarity, the FMP and DEIR maps abandon the numerical JDSF categories (ie size 5) and express vegetation as either "less than 18 inch dbh" or "greater than 18 inch dbh." Considering the FMP and DEIR indicate that JDSF is planning on retaining old growth trees defined as 48" dbh and greater, using 18" trees as the largest vegetation size mapped provides only the most minimal information about the forest stands that the public has consistently expressed the most concern about--the oldest, largest trees. Information in my library suggests that an 18" tree on Site II (the majority of JDSF) would be around 45 years of age. Additionally, DEIR page 216 clearly indicates that JDSF knows where its CWHR size 6 (greater than 24" dbh) is located, because they have told us they have 9,444 acres of it. Why the DEIR does not provide a map that would inform the public where larger, older trees are will remain in the realm of speculation. Nevertheless, the absence of this information is a significant omission of the DEIR that makes it very difficult for the public to assess how much of the oldest, largest second growth forest stands will be protected and how much will be logged. 11

Nevertheless, the public has made the attempt to figure this out. We have done this by consulting DEIR Figure F, the Vegetation Management Class Map, and comparing it with Figure H, the Special Concern Areas Map. Using the tried and true, if old-fashioned, tracing method, we have transferred the outlines of the Late Succession Management Areas associated with the old growth groves and the Woodland Special Treatment Area (WSTA) (from Map H) onto the Vegetation Map (Map F). Other than the Watercourse and Lake Protection Zones (WLPZs), these are the only blocks of Jackson that are designated specifically for late successional forest development.

As noted above, the Vegetation Management Class Map F categorizes conifer timber as either "less than 18" dbh" (< 18") or "greater than 18" dbh" (> 18"), and further indicates by shading of color, whether these stands are Dense (D), Medium (M) or Sparse (S). For the sake of the analysis, we have assumed that "greater than 18" Dense" would include the oldest, largest second-growth trees at Jackson in the stands that have been logged least recently. We have also assumed that "greater than 18" Medium" would include stands of older, larger trees, that may have been entered for logging in the past 80 years-110 years. We acknowledge that both of these mapped categories may include younger stands, but believe there are no other mapped categories that are likely to include the oldest, largest second growth.

Comparing the information from Map F, the Vegetation Map, with Map H, the Special Concern Areas Map, in this way indicates that, with the exception of the old growth itself (459 acres), the overwhelming majority of the "greater than 18" Dense" stands are not designated as Late Successional development. Further, the largest Late Successional Development Area, part of the

Woodlands Special Treatment Area, has only a very few acres of "greater than 18" Dense" timber, although it does contain quite a bit of the "greater than 18" Medium" timber. Left outside the Late Successional Development Areas are the largest blocks of "greater than 18" Dense" timber, which are located in approximate order of size at: South Fork Hare Creek,[6] South Caspar Creek, Camp One Complex, West of Road 500 near South Fork Hare Creek, headwaters of Russian Gulch, and north and south of, but not included in the
12 Camp 20 old growth grove. Not a single one of the large blocks of "greater than 18" Dense" has been included in a Late Successional Development Area.

At significant expense, we are providing a map for the record that uses your data but compiles the information into a single map to demonstrate our analysis. We appreciate that you allowed us access in a timely fashion to the public data from which the DEIR maps were created, so we could illustrate our analysis. (Exhibit G)

According to DEIR page 179:

> JDSF intends to recruit trees with late successional characteristics in areas that enhance the ecological effects of forests with these structural characteristics. Trees with late successional characteristics cannot be recruited during the life of the management plan. However, young-growth trees, over time, can be allowed to grow to develop structural characteristics similar to old-growth trees. The JDSF Management Plan makes a commitment to manage identified forest areas to achieve that goal in as short a time frame as possible.

We find it unlikely that developing "structural characteristics similar to old-
12 growth trees" will happen in "as short a time frame as possible" unless one starts with the oldest second growth available. The FMP does not propose to do so and the DEIR has failed to identify this failure as a significant adverse impact.

13 The Thornburgh Analysis

Appendix 8A, pages 26-39 is entitled "Evaluation of Late Successional Forest Development for Alternatives B, C, D and E as Presented in the DEIR for the JDSF Forest Management Plan" by Dale A. Thornburgh, PhD. Dr. Thornburgh is a well-respected forestry professor at Humboldt State University.

Having looked at this over and over I am only now beginning to have a glimmer of understanding about what the Thornburgh Analysis may be about. It is very confusing because of the context in which it is presented in the main body

[6] An examination of the Landsat image provided suggests that this area may have been recently logged and that the vegetation map is not current. If true, this is quite unfortunate as this area, at first analysis, appeared to have had the habitat features and proximity to the ocean that would have made it a top candidate for murrelet recovery habitat.

of the DEIR at Page 178-181 where the segment of the Analysis pertaining to the FMP is also reproduced. In the main body of the DEIR, this is a section that purports to identify impacts. The top of page 178 says, "Impact: Old Growth Forest (Less than Significant and Beneficial)." The next category beginning at the bottom of the same page says, "Impact: Protection of Late Seral/Successional Forest Characteristics (Less than Significant and Beneficial)." That paragraph begins with a review of information about preservation of the Old Growth Groves, the Late Seral Management Areas, and the Woodlands STA, as well as the WLPZs that are to be managed as late successional development. All of these have been the featured core of the supposed late successional development on JDSF throughout the DEIR.

The next paragraph begins: "JDSF intends to recruit trees with late successional characteristics in areas that enhance the ecological effects of forests with these structural characteristics....The JDSF Management Plan makes a commitment to manage identified forest areas to achieve that goal in as short a time frame as possible."[7] It has taken me many, many readings to begin to realize that the discussion in this paragraph has shifted and the DEIR is apparently now talking about areas *other than* the special Late Seral Development Areas. The "identified forest areas" of this paragraph are apparently not the same areas as those identified in the previous paragraphs.

Then the Thornburgh Analysis is introduced saying: "The following discussion is based on the conceptual changes that will occur following the selective harvest of an even-aged timber stand as found on JDSF." Because this section is introduced so poorly, I had been assuming this hypothetical stand was meant to be in the Late Seral Development Areas. I now can see that it is at least possible that this analysis is meant to pertain to stands within the uneven-aged management component of the timber program.

This interpretation does seem to fit in with the introductory Note in Appendix 8A. This note, that appears not to have been written by Dr. Thornburgh, says:

> "This evaluation was completed by Dale Thornburgh at the request of NRM Corporation to provide a basis for comparison of alternatives in regards to late seral/successional forest development. The evaluation is limited to alternatives that propose active management of the timber stands. Alternative A was not considered in this evaluation. This evaluation is also limited to the use of unevenaged silvicultural in the various alternatives. Although the evenaged silviculture presented in the Draft Management Plan includes retention of forest structure to provide wildlife habitat, and includes relatively long rotation ages in some management compartments, it is the intent of this system to produce a stand of trees that will be harvested at a certain age. The evenaged management areas are essentially outside of the range of consideration for development of late successional forest characteristics."

[7] See previous page for full paragraph.

If all of this put together is meant to tell us that JDSF plans to manage its uneven-aged management areas in the timber program to become late successional forest stands, that is a goal that we could support. This is an extremely obscure way of announcing this, if it is true. We do note that it would seem to be very unlikely that the Small Group Selection component of the forest's uneven-aged management program would be likely to achieve late successional status because the openings are so large.

We are skeptical, however, that the FMP does intend to develop the uneven-aged management areas as late successional stands. In an attempt to understand the Thornburgh Analysis, a consulting forester who reviewed the documents asked JDSF personnel whether that was the intent, and he understood them to reply that it was not. So I continue to wonder exactly what the point is of Dr. Thornburgh's analysis. The DEIR is very confusing in this matter.

A crucial paragraph that would lead the reader to hope that indeed the uneven-aged management compartments (although certainly not the group selection areas) will be managed to achieve late successional status is located at FMP page 47. It says:

> "Uneven-aged management will eventually produce multi-aged stands with varied levels of large trees and structural habitat elements, many of which will be characterized similarly to WHR 6 habitat as currently defined."

An initial impression from reading the only reference in the DEIR on this subject (based on an Adobe search of the term "uneven-aged management") seems to indicate that all uneven-aged management will lead to late successional status. According to DEIR page 203:

> "Snags, down logs, hollow trees, living trees with brooms and decay are all structural elements of the Forest used by various wildlife species. The DFMP includes specific retention standards for snags and down logs (refer to wildlife section) and has allocated a majority of the Forest to uneven-aged management and development of forest Late Seral characteristics. This management direction is intended, in part, to provide these types of structural elements across the Forest for the benefit of wildlife."

A more careful read discloses that there is a distinction between full late successional status, and the development of "characteristics" typical of late successional forest. It appears that the uneven-aged management areas will have some "characteristics" of this older forest type, not necessarily the full range of these characteristics in each stand that would allow them to truly be identified as late successional stands. This is a significant distinction that the DEIR makes no attempt to clarify.

The task that Dr. Thornburgh has been given—to demonstrate that certain sorts of uneven-aged management can lead toward late successional forest characteristics is relevant only to stands that are actually managed in the way Dr. Thornburgh describes. This is painfully clear from the conclusions he reached in relation to the Late Seral Emphasis Alternative E, which used an uneven-aged management scenario that *did not achieve* a significant level of late successional characteristics. There is no information in the FMP or DEIR regarding actual silviculture treatments proposed, so there is no level of assurance that late successional characteristics will develop, not to mention actual late successional stands.

It is also unclear why in the analysis of each alternative, the initial stand type chosen was a "40-60 year old 2nd growth stand...even aged stand with a mixture of redwood, Douglas fir and other more tolerant conifers." [sic: presumably, shade tolerant] As noted above, according to manager Marc Jameson, JDSF has 10-12,000 acres of 80-110 year old second growth. What
13 was the point of starting Dr. Thornburgh's analysis of how to develop late successional characteristics with trees as much as 70 years younger than the oldest available? This was not explained in the DEIR and is a significant omission.

Perhaps the stands that are to be managed under uneven-aged management and will achieve late successional characteristics mostly consist of 40-60 year old stands? If this is true, using these younger stands to mitigate for logging the much older 80-110 year old second growth would not be appropriate, because as the Thornburgh analysis demonstrates, it's going to be a very long time indeed, almost 100 years, until the 40-60 year old stands, even under optimal management, begin to develop late successional characteristics.

Before leaving Dr. Thornburgh's analysis we have to point out something that raises an issue of good faith. In the analysis for Alternative C, the preferred alternative, ie the FMP, the analysis determined that after 100 years: "The development of late successional forest conditions will be progressing towards the optimum conditions that are found in late successional forests." In this alternative, the silvicultural system used starts: "[O]n a irregular [sic] basis each stand will be entered every 25 years to harvest 50% of the growth since the last entry." When we turn to the analysis of Alternative E, the Late Seral Emphasis alternative, the silvicultural system begins: "Uniform selection cut: 1/3 of the trees, 60-70 trees, are removed uniformly through the stand, leaving the remaining trees equally spaced." The resulting stand after a 100 years is indicated to be: "In general the development of late seral structural characteristics will be very slow in this 100 year time period following the crown closure at age 10-15 years following the initial uniform selection cuts."

In other words, the analysis for the Late Seral Emphasis Alternative was set up so that it performed *less well* at late seral development than did the preferred

alternative C, the FMP. Isn't it a bit much to set up the scenario in such a way as to assure the Late Seral Emphasis alternative fails at its primary purpose? Lest there be confusion, we presume that Dr. Thornburgh was presented with the silvicultural systems that were supposed to be plugged into the analysis and proceeded from there. We have no reason to believe that he would set out to create a failing sequence. While we recognize that CDF does not like the idea of the Late Seral Emphasis alternative, doesn't this amount to an exercise in nose thumbing at the proponents of the Late Seral Emphasis that someone at CDF or NRM (the DEIR contractor) should have recognized as inappropriate? For the record, I make these remarks as someone who has been trying to find a middle ground between the FMP as proposed and the Late Seral Emphasis alternative. I am not its proponent.

The Thornburgh analysis was very helpful in some respects. It clearly demonstrates that whether or not one develops late successional forest or some of its characteristics is not a function simply of uneven-aged management, but rather depends on the specifics of how one applies that management and to the initial stand characteristics. In the course of the DEIR review we asked consulting forester Roger Sternberg to review the FMP and DEIR. Among his recommendations are that the FMP and DEIR should include information about both current stand characteristics and proposed management activities that would allow the public to better understand what Jackson will actually look like over time. He points out that this sort of information is required by the CA Forest Practice Rules for approval of a Non-Industrial Timber Management Plan (NTMP FPR Section 1090.5) [Exhibit H]. Without more
13 specific information of this sort, it is impossible for the public to determine when and where stands at Jackson will develop late successional characteristics.

My review of the Thornburgh analysis, which I happened to have read first, has led me to approach cautiously the preceding segment of Appendix 8A, pages 19-25, entitled "Some Comments on the Effects of Silvicultural Options on Forest Structure" by James L. Lindquist, another eminent expert, discussing several forest structure development demonstrations. The message I take home from these remarks is that there is a wrong way to do just about anything. That certain uneven-aged management demonstrations have resulted in poor stand volume increases does not invalidate uneven-aged management. It has been and is still being used successfully by many non-
14 industrial timber managers. On industrial lands, Big Creek Lumber, the largest private timberland owner south of San Francisco, manages their land that way. And one of the largest industrial owners in the area, Mendocino Redwood Company, is now managing the ownership it purchased a few years ago from Louisiana Pacific increasingly through the use of uneven-aged management. It may take a little more care, but it is a feasible way to manage timberlands for sustained production of timber.

We make the following recommendations:

- 15 The DEIR should provide the information indicated in the text to enable the public to adequately assess current conditions, proposed management activities, and future outcomes.

- 16 JDSF should review forest stand information and designate all the 80-110 year-old unentered [8] second-growth as late successional development areas. These areas should be mapped prior to approval of the FMP.

- 17 JDSF should review forest stand information and designate more recently managed 80-110 year old, and other appropriate forest stands as buffers and connectors for the unentered second-growth late successional development areas.

- 18 JDSF should review managed stands to determine which are developing in a direction that appears to be leading toward late successional characteristics over time. Stand management records should be consulted to determine the management activities that led to that development. A report should be written with the findings.

- 19 JDSF should manage a significant part of its timber program across the forest to become late successional stands over time.

- 20 JDSF should eliminate even-aged management and other timber management techniques that preclude management for late successional characteristics over time.

- 21 As a demonstration, develop a vegetation classification system that more closely represents the full range of forest stand types in the redwood region than do currently available systems. Use peer review to validate.

WLPZ as Late Successional Forest and Acreage Figure Discrepancies

The FMP relies to a very great extent on developing late successional forest in the Watercourse and Lake Protection Zones (WLPZs). With the exception of the ~2500 acre Woodlands Special Treatment Area (which itself has a 270 acre patch in the middle that is slated for logging) and the few much smaller Old-Growth Groves and Late Seral Management Areas totaling 1239 acres spread across seven locations, all the other areas designated for late successional development are thin ribbons of riparian habitat along streams that appear to total 5930 acres spread across the ~50,000 acre forest. The overwhelming proportion of acreage dedicated to late successional forest development will

[8] Has not been logged since the original entry early in the last century.

occur in the Class I and II WLPZs. We completely agree that developing this type of forest stand within the WLPZs is appropriate. However, we do not
22 believe the FMP or the DEIR have adequately identified the limitations in how narrow bands rather than large blocks of this habitat are likely to function for species that are dependent on older forests for important life functions.

The importance of forest patch size and the problem of edge effect are well-known issues that are mentioned in the DEIR on page 224, but not in relation to how WLPZs will function:

> "Of more concern for forest-breeding neotropical migrants may be the size of forest patches. Fragmentation of continuous forest cover resulting from natural events, such as fire, windthrow, or human activities, reduces the size of forest patches and increases the edge-to-area ratio of the patch. The creation of open habitats allows some predators and brood parasites (particularly brown-headed cowbirds), associated with open habitats, to access forested areas previously inaccessible. Brand and George (2000) found the "distance from forest edge to be an important variable in explaining the probability of predation." Thus, by creating edges of open habitats adjacent to forest cover, timber harvesting may have an adverse affect on reproductive success of some neotropical migratory birds."

The California Department of Fish and Game (CDFG) also commented on this
23 problem and suggested that you not count WLPZs adjacent to even-aged management blocks as acres of late successional forest. The DEIR does not address their concern. Later we will suggest much wider WLPZs, to partially mitigate this potential impact.

Throughout, the FMP and DEIR appear to count Class I WLPZ as 150 feet, and Class II as 100 feet when calculating how much late successional forest they will provide. This is in spite of the fact that the Class II zone is a variable zone that can be 50 feet or 100 feet, or presumably something in between. No clear standards are articulated about when the Class II zone is larger or smaller.
24 DEIR page 107 says there are 186 miles of Class II streams on Jackson, so this lack of clarity represents a significant discrepancy that the DEIR has failed to identify or resolve.

Considering how important this late successional issue has been to the public and how much ink is used regarding it in the DEIR, we find it perplexing that there are significantly different acreage figures provided for it in the DEIR:

DEIR page 33:	9,680 acres	20% (of forest total 48,652 acres)
DEIR page 172:	11,190	23% [9]
FMP page 48:	9,680	

[9] Percentage numbers provided by the DEIR.

includes WLPZ, OG (459 acres total in 11 groves), LSS Management (780 ac), Woodlands STA (2511 ac)

Arithmetic, mine not the DEIR's, yields: Total non-WLPZ LSS acres = 3750 acres. This is not very much for the entire 50,000 acre forest!

Using the FMP's late successional figure of 9,680 acres total and subtracting the 3,750 acres of non-WLPZ late successional yields a total of 5,930 acres of WLPZ that is being counted as late successional.

Of course if you use the DEIR's 11,190 figure and subtract the 3,750 acres of non-WLPZ late successional, you come up with 7,440 acres of WLPZ.

Unfortunately adding to the confusion, DEIR page 109 says there are 7,753 acres of WLPZ. This page specifically notes that this calculation is based on a 150 foot Class I WLPZ and a 100 foot Class II WLPZ.

25 These are pretty substantial discrepancies that have not been identified by the DEIR. In fact, it is the DEIR that has provided these confusing figures. I make the assumption that the FMP acreage figures for the non-WLPZ late successional management areas are highly likely to be correct, given the relatively discrete area the numbers describe.

Finally, how much of the WLPZ currently meets any of the various surrogates or definitions for late successional forest? We are told quite a bit of the WLPZs have a high level of "shade value." This is illustrated in DEIR Map E. But an examination of the map I have provided [Exhibit G] that overlays DEIR Map H (Special Concern Areas, including the WLPZs) onto DEIR Map F (the vegetation map) indicates that large stretches of stream reaches in most, if not all, watersheds do not show as the "greater than 18 inch Dense" type of vegetation. 26 Thus the WLPZ as late successional forest is largely speculative and somewhere in the future. It does not seem particularly fair to count it as currently available habitat. None of these matters were brought to our attention by the DEIR.

We make the following recommendations:

- 27 The DEIR should clarify all information as noted in the text and provide the information requested.

- 28 JDSF should not count WLPZs as late successional forest development areas unless the stream buffers are substantial enough to avoid edge effect within a significant proportion of the WLPZ.

- 29 WLPZs should not be used as a substitute for maintaining and creating large blocks of late successional forest in all parts of JDSF.

Old Growth

In the six years during which I have been actively engaged in issues relating to Jackson Forest, it has often been difficult to discern much response on the part of the Department to the concerns expressed by the public. The most obvious exception has been in relation to Jackson's old growth. We are *very happy* to see the FMP clearly delineates the major old growth groves, prohibits logging in them, and provides a late successional management area around three aggregations of them. Provisions are made for aggregations of scattered old growth residuals. Additionally, the FMP indicates that under most circumstances individual old growth trees will not be felled. These are all very important steps that will certainly help address one of the more persistent and emotional sources of conflict regarding JDSF management.

However, old growth trees are unique and irreplaceable, even when smaller than average, or isolated. The removal of any such irreplaceable resource
30 would be a significant adverse effect of the FMP that has not been identified by the FMP and for which no mitigation is proposed.

We make the following recommendations regarding further strengthening measures that should be taken:

- Retention standards: A review of presumed old growth trees should be undertaken to determine whether the 48" dbh default standard is appropriate, particularly for Douglas fir old growth, and particularly on the east side, in the higher elevations, or on poorer soil sites on the forest. The
31 point should be to determine a standard that is the most inclusive practicable, even if it is necessary to distinguish standards among species or sites. The 48" standard may be too high in some common circumstances.

- Aggregations: If taken literally, the aggregation policy would exclude the aggregation of scattered residual old growth because the standard requires "an obvious, intact, undisturbed remnant of the original stand...." By far and away the most common occurrence of scattered old growth for potential
32 aggregation is among residual trees that were left after a stand was logged. These would not be either "intact" or "undisturbed." For instance there are many scattered residual old growth trees along West Chamberlain Creek, but the stand has obviously been logged in its history. Besides changing the language of the aggregation policy, I strongly suggest that specifically you designate the West Chamberlain area as an old growth aggregation. There are, no doubt, many other areas of scattered residuals that should be aggregated as well. These should be designated as soon as possible, and mapped.

- Old Growth Groves: We are pleased to see these groves designated, but have also noticed that in several instances there is vegetation mapped adjacent or very nearby to either the groves themselves or the designated Late Seral Management Areas that would seem to be reasonable candidates for inclusion in an LS Management Area because they are "greater than 18" Dense" stands. Specifically these include: Stands north and south of the
33 Camp 20 Old Growth Grove; stands to the east of the Lower James Creek Grove; older fir south of the Chamberlain Creek Complex and dense habitat to the north and north east; and dense stands both south and southwest of the North Fork of South Fork Noyo Complex. While some of these lines may have been drawn at watershed breaks, it could be a plus to extend the protection across the watershed into the adjacent drainage when the available habitat is dense there.

- Single Old Growth Trees: They aren't making any more of them, at least not in our lifetimes. They are irreplaceable, non-renewable resources. Roads
34 can be realigned, yarding corridors can be reconfigured. Except for imminent threat to human life that cannot be mitigated, every single old growth tree should be retained.

Marbled Murrelets

One of the positive aspects of reviewing the FMP and DEIR has been the opportunity to acquaint myself with the most recent information regarding marbled murrelets in this region. Having spent more than 10 years trying to get Headwaters Forest in Humboldt County protected so that the murrelets there would not be eliminated, I have a particular interest in making sure that our efforts there are not undermined by actions, or failures to act, elsewhere. Marbled murrelets are listed as endangered under the California Endangered Species Act (CESA), and as threatened under the federal Endangered Species Act (ESA). The marbled murrelets known to be nesting on state parkland adjacent to Jackson must be protected from any potential impairment of their
35 breeding success. The DEIR seems to cast doubt on the presence of these marbled murrelets and on murrelets in general in Mendocino County. Nevertheless, a simple phone call to Russian Gulch State Park confirms that protocol surveys have detected nesting behavior in Russian Gulch for at least the past four years. (Personal communication with State Parks biologist Renee Pasquinelli). The DEIR also failed to mention the well-known presence of
36 nesting marbled murrelets in Alder Creek near Pt. Arena on lands owned by the Mendocino Redwood Company.

We asked noted marbled murrelet expert S. Kim Nelson to review the JDSF FMP and DEIR in relation to murrelets and she has submitted her comments directly to the Department. Based on her recommendations and on our

knowledge of Jackson from review of maps, Landsat imagery, and personal familiarity with the forest, *Sierra Club make the following recommendations:*

37 First, a very large no-logging buffer must be established in the contiguous and nearby forest stands in Jackson to protect these endangered nesting birds in Russian Gulch. The DEIR Map F, when watercourses from Map H are traced onto it (see Exhibit G) indicates blocks of the largest tree size class and most dense habitat mapped along both branches of Russian Gulch where they extend into Jackson, directly upstream from the known murrelets. These forest stands, currently slated for logging, must be completely protected.
37 Failure to do so would be a significant adverse impact on a species listed by both the state and federal government.

38 Second, in the older second growth forest beyond the no-logging buffer, new marbled murrelet habitat should be developed. To accomplish this, marbled murrelet experts should identify significant, well placed high quality habitat and implement controlled experiments to determine how best to create suitable nesting habitat for murrelets over time. Although the relatively nearby Woodlands Special Treatment Area is designated for late successional forest development, it should not automatically be assumed that this is the best location to develop murrelet habitat. The high use road, the Helms experimental plot that fragments this area, and the Woodlands group camps used throughout the year by thousands of people,[10] may not be the best location for developing murrelet nesting habitat. Murrelet experts should determine whether it is suitable.

Regardless of whether the Woodlands STA is suitable for murrelet habitat, we do support its designation as a late successional forest development area.

39 Murrelet experts should be consulted to determine locations on the west side of the forest where development of murrelet nesting habitat should be demonstrated.

Specifically, the following areas should be designated as buffer or for consideration as areas for habitat development and demonstrations:

40
- the entire Russian Gulch watershed, including previously logged lands
- all areas of mature second growth forest south and west of the Woodlands Special Treatment Area
- the mature second growth forest roughly west of Road 408 and south of Road 630

[10] According to Don Young, Director of the Mendocino Woodlands, the camps there generate 28,000 camper days per year. The Woodlands area is relatively small, so those campers are heavily concentrated in this area, which bisects Jackson's proposed Woodlands Special Treatment Area.

- The mature second growth forest in the Jug Handle Creek watershed
- At the west end of the forest, the mature second growth remaining on either side of Road 500
- The south fork of Hare Creek and the older stands on the mainstem of Hare Creek
- Pygmy forest and other habitat unsuited to murrelets within these areas should be managed to avoid impeding murrelet habitat recovery
- To avoid edge effect, the Railroad Gulch experimental area (Helms Plot) slated for logging within the 2500 acres you have already proposed as a Late Seral Development Area should not be logged except as advisable to accelerate late succession characteristics.[11]
- Any project undertaken in the Woodlands STA should be done with the written agreement of the Mendocino Woodlands.

We believe these actions are necessary for the following reasons:

The marbled murrelet (Brachyramphus marmoratus) is a small diving seabird that nests on the limbs of old-growth trees within, in California, approximately 25 miles of the sea. In early 1992, it was listed as endangered by the California Fish and Game Commission pursuant to the California Endangered Species Act (CESA). In late 1992 it was listed as threatened by the U.S. Fish and Wildlife Service in pursuant to the federal Endangered Species Act (ESA). Federal Critical Habitat was designated in 1996. The final federal Recovery Plan was published in 1997. Under the federal listing, Jackson Demonstration State Forest is designated as critical habitat for the marbled murrelet. Litigation was instrumental in achieving the state and federal listing.

According to the federal Recovery Plan: "The weight of evidence indicates that the major factors in marbled murrelet decline from historical levels in the early 1800s (or earlier) are (1) loss of nesting habitat and (2) poor reproductive success in the habitat that does remain, a phenomenon that appears due in large part to increased vulnerability of nests to predators in highly fragmented landscapes." (page 10) [12]

According to State Parks biologist Renee Pasquinelli, marbled murrelets have been detected in Russian Gulch State Park, adjacent to Jackson, for at least the last four years. Surveys have been conducted to protocol every year during that time and have detected breeding behavior up the Russian Gulch drainage. The headwaters are located on Jackson in an area designated for commercial timber harvest under the draft Plan.

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[11] I contacted Dr. Helms regarding the Railroad Gulch experimental area to try and determine his plans. He informed me that he has retired and has no plan to continue the experiment. He stated that the fate of this block was "up to CDF."

[12] US Fish and Wildlife Service. 1997. Recovery Plan for the Threatened Marbled Murrelet (Brachyramphus marmoratus) in Washington, Oregon, and California. Portland, Oregon. 203 pp.

41 The DEIR made no mention of the information in and recommendations of the federal Recovery Plan for marbled murrelets. It should have. According to the Recovery Plan:

> "The very small nesting and at-sea population of marbled murrelets along the coast of Mendocino, Sonoma and Marin Counties is important to future reconnection of marbled murrelet populations in northern and central California, if they can survive over the short term. Almost all of the older forest has been removed from this area, although small pockets of old-growth forest occur in State parks and on private lands.... Much of the remaining marbled murrelet nesting habitat in this Zone [Zone 5, Mendocino County] is located on private lands.
>
> "The maintenance of this population will require considerable cooperation between State, Federal and private management representatives. Recovery efforts in this Conservation Zone could enhance the probability of survival and recovery in adjacent Conservation Zones by minimizing the current gap in distribution. The population is so small that immediate recovery efforts may not be successful at maintaining this population over time and longer term recovery efforts (e.g. developing new suitable habitat) may be most important. However, if this small population can be maintained over the next 50 years, it will greatly speed recovery in this Conservation Zone. Whether or not marbled murrelets can recolonize regenerated old-growth forests over such a large geographic area is not known." (page 129)

The federal Recovery Plan is the best available scientific information about the status of marbled murrelets. The information in the Recovery Plan indicates that it is reasonable to believe the very existence of marbled murrelets in the region, and perhaps beyond, may depend on actions taken at Jackson.

42 Murrelets' status as endangered under the California ESA makes it incumbent on Jackson to implement the federal recovery plan strategy. Under CESA, state agencies have a duty to help recover endangered species as per Fish and Game Code sections 2053, 2055, and 2061:

> 2053. The Legislature further finds and declares that it is the policy of the state that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy.
>
> 2055. The Legislature further finds and declares that it is the policy of this state that all state agencies, boards, and commissions shall seek to conserve endangered species and threatened species and shall utilize their authority in furtherance of the purposes of this chapter.
>
> 2061. "Conserve," "conserving," and "conservation" mean to use, and the use of, all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter

are no longer necessary. These methods and procedures include, but are not limited to, all activities associated with scientific resources management, such as research, census, law enforcement, habitat acquisition, restoration and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

The federal Recovery Plan is the best available science regarding how best to conserve marbled murrelets. Its recommendations must be applied at Jackson.

Because the region's forestland is overwhelmingly held as private property, Jackson Demonstration State Forest is the only opportunity available in the region where it would be possible to develop marbled murrelet habitat on a large scale. This should be done. Finally, research on how best to accomplish this is needed and doing so is completely within Jackson's "demonstration" mission. The FMP as proposed fails to make a substantial contribution to
43 recovery of marbled murrelets and this is a significant adverse effect of the plan that the DEIR has not identified and for which no mitigation is currently proposed by the Department. The FMP as proposed also violates CESA. We have herein proposed mitigation and ask that you incorporate that mitigation into the Forest Management Plan.

Riparian Protection

A disappointing aspect of Jackson's Management Plan is the statement of Riparian Management prescriptions. The prescriptions are only somewhat more protective than the Forest Practice Rules required for approval of a Timber Harvest Plan (THP) in California. These prescriptions do not constitute a riparian management strategy. They are not nearly as comprehensive as the federal standards for riparian management adopted as the *Standards and Guidelines for Management of Habitat for Late Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* [13] *(Standards and Guidelines)* adopted more than eight years ago, after rigorous scientific review, for federal forests in the same ecosystem as Jackson. The Forest Ecosystem Management Assessment Team (FEMAT) Report[14] detailing the science supporting adoption of the *Standards and Guidelines*, states there are 199 species of plants and animals associated with late-successional and old growth riparian areas in this region, including 38 species of birds, 18
44 species of mammals, and 11 species of bats. Among the objectives of the

[13] UDSA Forest Service, UDSOI Bureau of Land Management, *Record of Decision and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl*, April 1994,
[14] USDA Forest Service, USDOC National Marine Fisheries Service, USDOI Bureau of Land Management, USDOI Fish and Wildlife Service, USDOI National Park Service, Environmental Protection Agency. *Report of the Forest Ecosystem Management Assessment Team*, July 1993.

federal Aquatic Conservation Strategy is to: "Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species." [15] A similar goal, with a similar strategy, should be established for Jackson. The FMP fails to adopt such a goal and strategy. That failure constitutes a significant adverse effect on the environment that is not fully identified by the DEIR and for which incomplete mitigation is offered in the DEIR.

44

According to *Standards and Guidelines:*

> The Aquatic Conservation Strategy was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The strategy would protect salmon and steelhead habitat on federal lands…within the range of Pacific Ocean anadromy…..
>
> Any species-specific strategy aimed at defining explicit standards for habitat elements would be insufficient for protecting even the targeted species. The Aquatic Conservation Strategy must strive to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and restore currently degraded habitats. This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds. Because it is based on natural disturbance processes, it may take decades, possibly more than a century, to accomplish all of its objectives. Some improvements in aquatic ecosystems, however, can be expected in 10 to 20 years." [16]

For comparison with the draft Jackson Plan described later, the following is excerpted from the federal *Standards and Guidelines* for Riparian Reserves. The system is based on the concept of "site-potential tree height." "A site potential tree height is the average maximum height of the tallest dominant trees (200 years or older) for a given site class" [17]

> "Fish-bearing streams – Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest.
>
> Permanently flowing nonfish-bearing streams – Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree,

[15] *Standards and Guidelines*, Page B-11
[16] *Standards and Guidelines*, Page B-8.
[17] *Standards and Guidelines*, Pages C-30-32.

or 150 feet slope distance (300 feet total, including both sides of the stream channel), whichever is greatest. .....

Seasonally flowing or intermittent streams, wetlands less than 1 acre, and unstable and potentially unstable areas – This category applies to features with high variability in size and site-specific charcteristics. At a minimum, the Riparian Reserves must include: The extent of unstable and potentially unstable areas...; The stream channel and extend to the top of the inner gorge; ...; Extension from the edges of the stream channel to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest. .....

Prohibit timber harvest, including fuelwood cutting, in Riparian Reserves, except as described below. Riparian Reserve acres *shall not be included in calculations of the timber base*. [emphasis added] [Exceptions include salvage if required to attain Aquatic Conservation Strategy objectives, salvage under certain other conditions] Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives."

Although the major features have been reproduced above, please refer to *Standards and Guidelines* for additional details of the federal Riparian Management Strategy.

Although riparian management is sometimes mistakenly considered to be limited in importance to fish and aquatic organisms, the State of California has correctly recognized the importance of riparian areas for avian species. The Riparian Bird Conservation Plan is a collaborative effort of the Riparian Habitat Joint Venture (Joint Venture) made up of numerous federal and California state agencies and non-profits including the CA Department of Fish and Game, the US Fish and Wildlife Service, Point Reyes Bird Observatory, and Audubon Society. According to the Joint Venture's August 2000 Conservation Plan, "due to their biological wealth and severe degradation, riparian areas are the most critical habitat for conservation of Neotropical migrants and resident birds in the West.... The loss of riparian habitats may be the most important cause of population decline among landbird species in western North America." [18] The Jackson DEIR notes that "133 species of neotropical birds have the potential to occur on JDSF." [19] The DEIR does not appear to provide information regarding how many species are known to currently use JDSF. 46

The DEIR does correctly point out that forest patch size, habitat fragmentation, and resulting predation are major concerns in nesting success for Neotropical bird species. The following was excerpted previously but is reproduced here for convenience.

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[18] Partners in Flight and the Riparian Habitat Joint Venture, *The Riparian Bird Conservation Plan*, August 2000. Executive Summary, Page v
[19] DEIR Page 223

> "Fragmentation of continuous forest cover resulting from natural events, such as fire, windthrow, or human activities, reduces the size of forest patches and increases the edge-to-area ratio of the patch. The creation of open habitats allows some predators and brood parasites (particularly brown-headed cowbirds), associated with open habitats, to access forested areas previously inaccessible. Brand and George (2000) found the 'distance from forest edge to be an important variable in explaining the probability of predation.' Thus, by creating edges of open habitats adjacent to forest cover, timber harvesting may have an adverse affect [sic] on reproductive success of some neotropical migratory birds." [20]

Yet, with the exception of the 2500 acre Woodlands Special Treatment Area (which itself has a 270 acre patch in the middle that is slated for logging) and the few much smaller Old-Growth Groves and Development Areas totaling 1239 acres spread across seven locations, all the other areas designated for Late Succession Development are thin ribbons of riparian habitat along streams
46 that appear to total 5930 acres spread across the ~50,000 acre forest. It is highly likely that much of these narrow riparian corridors will not provide adequate habitat for many riparian dependent species.

On Class I (fish-bearing) streams, the FMP-proposed Watercourse and Lake Protection Zone (WLPZ) is 150 feet wide divided into an Inner and Outer Band. These slender ribbons of habitat consist of a 25 foot Inner Band where logging is excluded except for "cable corridors where needed" and except "to improve salmonid habitat through use of selection or commercial thinning silvicultural
47 methods."[21] Straddling the bands, within 50 feet of the stream channel (i.e. including the 25 foot Inner Band), the largest 10 trees per 330 linear feet of stream (the Plan is unclear whether this is 10 trees per 330 feet on each side or both sides of stream) are to be kept. Adjacent to the 25 foot Inner Band, an additional 125 feet of WLPZ Outer Band allows significant logging within certain parameters: At least 70 percent overstory canopy must be maintained, 240 square feet of conifer basal area must be maintained, and re-entry is
48 limited to every 20 years. Clarification is required regarding whether the 240 square foot basal area retention is to be measured across the entire 150 foot WLPZ or only in the outer 125 feet. The later would be preferable because otherwise it is impossible to determine what sort of forest structure might
49 develop in the Outer Band. These are standards that have been developed from the perspective of fish rather than birds or mammals, but they are also not adequate for anadromous salmonids. Even a 150 foot no-cut zone adjacent to a logged stand will lose a very significant proportion of function to edge-
50 effect. With a mere 25 foot no-cut zone as proposed by the plan, it is unlikely the habitat will be able to adequately function as secure nesting habitat for
51 many riparian-dependent avian species. In addition to the problem with edge-effect, regular re-entries for logging, even limited to every 20 years, will be likely

[20] DEIR Page 224
[21] Plan Page 70

51 to damage the development of the complex riparian understory that provides important habitat for many species.

52 The DEIR, page 119 proposes mitigation if a Class I stream is deficient in large woody debris. This mitigation is to have either a 100 or a 150 foot no logging zone (no explanation of how to determine size of this zone) next to Class I streams that are deficient in wood. This is an improvement over the FMP. However, it is not comparable to the Standards and Guidelines and does not include Class II and Class III streams. Thus this mitigation for aquatic resources is not sufficient to mitigate the FMPs significant adverse effects on riparian dependent avian species, salmonids, and other wildlife dependent on complex late successional forest habitat.

We make the following recommendations:

- 53 Regarding riparian-related avian issues, we recommend that the FMP help implement the goals developed by the Joint Venture's Riparian Bird Conservation Plan.

- 54 In general, the FMP should use the federal *Standards and Guidelines* Aquatic Conservation Strategy as the default riparian management regime. Note that while the initial prescriptions include no timber management, after completion of a watershed analysis, modifications such as management for stand development are allowed.

Timber Management

Planning for timber management is the central core of the FMP and has clearly been given careful consideration. The broad outlines of the timber management plan are well presented and clear. It is the strongest part of the FMP. While we admire the conceptualization and presentation, unfortunately we have a basic disagreement with CDF about the focus of the timber program.

Because Jackson is the only public forest in the region, it must function in many roles. We believe this could be done under the current legislative 55 mandate if it was interpreted broadly. More of the forest should be off limits to commercial timber operations. This would not preclude stand management in *some* of these areas for late seral development or other demonstration purposes, but the timber inventory and the volume produced in the course of operations should be accounted for separate from the sustained yield calculations of the commercial timber production program.

56 The commercial timber production program should focus on becoming a showcase for producing a sustainable volume of timber in a way that does not offend the public. When Jackson was created, there was a serious question

whether logging second-growth forest could be profitable. We know the answer, and have known it for some time.

Jackson is not industrial timberland. But most of the managers of the forest and most of the CDF management in Sacramento come from timber industry backgrounds. It is against that experience that decisions are being made about what is good management at Jackson. We have high regard for a number of these people. But we are not sure whether key decision-makers are fully up to date about how progressive non-industrial timber managers are implementing sustained yield and uneven-aged management.

Everyone knows about Masonite's high-grading in the name of selection logging. Everyone has a story about un-evenaged management that has resulted in the take-over of shade tolerant non-commercial species. But have you been to Peter Parker's property, managed under a Non-industrial Timber Management Plan? Have you looked at lands managed by RPFs Jim Grieg or Craig Blencoe? They are the ones demonstrating sustained yield logging without creating offensive conditions on the ground. The question is not whether Jackson can do better than LP or G-P. Of course you can, and *you have been doing better.* The question is, rather, can Jackson achieve sustained
57 timber production using techniques that leave the landscape sufficiently like a natural forest that the public is comfortable with the management program?

The following comments are intended as guidance on where to start:

- **End Clearcutting**

We applaud the Department's recognition that certain modifications to silvicultural practices, like retaining legacy features, can provide important habitat at little cost to the landowner. Your adoption of standards for snag and down wood retention across the landscape is an important step in that regard. We concur with the comments included in the DEIR Appendix from the California Department of Fish and Game (CDFG) that called on Jackson to augment its goals for snags and large woody debris on the forest floor. The
58 DEIR recommended mitigation to keep all existing snags is a good start, but does not fully address the concerns voiced by CDFG. Snags are a vital resource for many species.

The FMP's decision to modify clearcutting by the use of variable retention of legacy components is a step in the direction that biologists and the public have long advocated. However, from the habitat protection perspective, a much better step would be to eliminate clearcutting altogether. While it is true that clearcutting creates habitat for some species, that habitat is already abundant in the region, whereas the species that prefer a more complex forested habitat are declining or already imperiled. Clearcutting, even with the addition of variable retention of legacy features, does not mimic any natural forest

condition in this region. Therefore, forest-dependent species are not well adapted to the large openings created by clearcutting. Additionally, the use of herbicides that generally accompanies clearcutting, is well-known to be harmful to many species of fish, birds, and wildlife, not to mention the human population. Herbicides also harm many smaller forms of life (for instance, insects) that are part of the food chain for higher species. Jackson already has huge tracts of previously clear-cut land where research can proceed. And even if all of the above were not correct, the simple fact remains: The public hates
59 clearcutting and Jackson is a public forest. We strongly urge you to eliminate clearcutting of any sort from the timber harvest program at Jackson.

- **Invasive Plant Infestations Happen for a Reason**

Jackson has a very significant invasive plant problem that is incompletely described in the DEIR. Pampas grass and other similar pest plant invasions
60 are directly proportional to the amount of forest canopy that is removed from a stand in a single operation. The DEIR fails to disclose this. Certain kinds of even-aged management, particularly clearcuts (by any name), as well as Group Selection with openings of 2 ½ acres to 5 acres are highly likely to precipitate additional infestations of invasive plant species, including pampas grass. It is hard to go anywhere on the forest where there is a significant opening and not find pampas grass. With the increased emphasis in the FMP on Group
61 Selection as an uneven-aged management technique, the DEIR provides no information about how you plan to avoid additional infestations. The DEIR claims that the general approach to potential adverse impacts is to avoid them rather than to mitigate them. But there is no explanation regarding how to avoid invasive plant infestations when the FMP proposes to deliberately create openings across the landscape. Lest one try to claim that the openings allowed under the Group Selection system are not large enough to trigger the problem, I suggest you visit any of the many landings that were used for previous operations, most of which are 2 ½ acres or less. You will find plenty of pampas
62 grass there. The DEIR fails to disclose this significant adverse impact from certain types of logging operations or propose feasible mitigations.

- **Herbicide Use Should be Avoided**

The perceived need for herbicide use is directly proportional to the extent of invasive plant infestations and native brush growth that occurs after too much of the forest canopy is removed in a single operation. The DEIR fails to disclose the connection between choice of management techniques and herbicide use.
63 Herbicide use should be eliminated by avoiding timber operations that result in invasive plant problems. Existing invasive infestations should be controlled using non-chemical means to the greatest extent feasible.

The DEIR hints at the intensity of opposition to herbicides locally. Herbicide use has been among the most hotly contested features of management at

JDSF. The mid-1990s plan to spray 70 miles of forest roads with herbicides was instrumental in galvanizing opposition to JDSF management.

64 In spite of that, the DEIR has not provided information about the location and extent of invasive plant infestations or the location and extent of likely use of herbicides even though herbicide use was identified as one of the three "most important" "areas of controversy" on DEIR page 6. This is a significant omission of information.

- **Slash**

65 Slash piles should be reduced across the forest and innovative methods of accomplishing this should be demonstrated. Jackson has a huge slash problem that the DEIR does not adequately identify. This is an adverse impact of timber operations from the point of view of fire danger, aesthetics, and recreation. Piles of logging debris 12 feet high and 20 feet long are not uncommon. 66 The DEIR incorrectly assumes that slash piles are only a problem near main forest roads. The DEIR falls into the same mistake as the JDSF managers do when they assume that small campground and road buffers are adequate to avoid impacts. The public wants to hike or bike throughout the forest without being confronted with huge piles of debris, limbs, and other slash mixed with great quantities of dirt. These piles are noticeable features in the landscape for ten or more years. While it may not be feasible to reduce slash retroactively except in the most high profile locations, contracts for the future should specify how slash will be disposed. 67 Failure to do so is a significant adverse impact to fire prevention and aesthetics that could easily be mitigated, but which has not been identified by the DEIR.

Some non-industrial timberland managers pack slash on skid roads to avoid run-off and prevent vehicular traffic. I personally remember when LP made its final cut along what became the Navarro River Redwoods State Park along Highway 128. They specified slash abatement that was far in excess of standard industry practice. The loggers complained, but the result is a strip of forest that does not shriek "logging" as one walks or drives through. Even if it is an extra expense, measures of this sort are appropriate in a publicly owned multi-use forest. "Humoring" the public about matters like this would be a feasible, small step toward repairing Jackson's strained relations with the public.

- **Salvage and LWD Recruitment**

68 The DEIR has failed to explain and integrate the many strands of apparently contradictory information within the DEIR about salvage operations and terrestrial large woody debris recruitment. On one hand DEIR pages 163-4 clearly indicate that salvage operations are permitted under specific constraints.

But on page 180, Large Woody Debris (LWD) is identified as one of the "important attributes" of late successional forests. And Page 219 indicates that:

> "Large woody debris (LWD) includes downed logs, limbs, bark, root wads, and stumps. Lack of LWD on the Forest floor can be a limiting factor to habitat use. Past timber harvesting practices have reduced the amount of LWD on the Forest floor of many managed forests.... Numerous wildlife species rely on LWD for cover, nest sites, or foraging habitats."

Further, pages 203-4 discuss the need to salvage diseased wood, while recognizing that diseased wood is often readily recruited into LWD.

Finally, on page 262 is the LWD recruitment policy:

> "**Large Woody Debris:** Manage for a minimum of two downed logs per acre that are at least 20 feet in length with a diameter of 16 inches on the large end and one log per acre at least 24 inches in diameter on the large end and at least 20 feet long. Log densities are averaged over a 160-acre subwatershed area. WLPZs and special concern areas will contribute a greater proportion of downed logs.

Comments from CDFG in Appendix 6 indicate this policy is not strong enough.

According to JDSF annual reports, the salvage volume in 1996 was 5 million board feet of timber. This seems like a large amount of salvage logging to be coming from a forest that has an identified lack of terrestrial LWD. The DEIR
69 does not explain how the salvage program will interact with the need to recruit LWD. This is a significant omission that may result in significant adverse impacts from salvage logging on LWD recruitment.

Recreation and Aesthetics

In general the DEIR takes the same approach to mitigations for recreation as one would expect to find in relation to private industrial timberlands: a small campground buffer where even-aged management is not practiced, for instance. There seems to be little recognition that campers and others have the *right to traverse the public land* beyond the campgrounds. Most non-industry people consider *any form of logging* to be an aesthetic impact.

70 Recreation corridors should be designated now. There is no need to wait for "visitor use surveys" as proposed by the DEIR. Jackson's staff knows where the high use areas are. They would certainly include all the principle routes to and around the camping facilities, the Mendocino Woodlands, and the old growth groves. Future surveys can refine and add to these obvious high visitor-use areas.

71 The DEIR has identified various aesthetic and recreation-oriented adverse impacts (pages 87-91) and points to the mitigations that are planned once the recreation corridors are designated. Failure to designate these now would result in identified significant adverse impacts to aesthetic and recreation resources but proposed feasible mitigations would not be implemented at the time of plan approval.

The DEIR Contractor

There is a definite hesitancy about bringing this up, but it seems remiss not to. Although SHN is indicated as the principal contractor for preparing the DEIR "with" NRM being listed second, a review of Appendix 3, the list of Preparers and Contributors, shows that six are listed as SHN people, with another four listed as SHN Subconsultants, and fifteen are associated with NRM. Gary Rynearson is listed as President of NRM. He is also a member of the Board of Forestry as a timber industry representative appointed by Governor Gray Davis. Although we presume Mr. Rynearson will recuse himself from voting on the matter, we believe that his company's strong presence in preparing the DEIR puts the members of the Board in an uncomfortable position. The
72 members of the Board are ultimately responsible for approving the DEIR and the FMP.

Or is it that clear? Oddly enough, there are two versions of the DEIR and FMP approval process printed in the DEIR. The first version appears in the Executive Summary, page 4:

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

Then on page 18 in the main body of the DEIR it says:

> "This EIR is intended as a public disclosure and decision-making tool for adoption of the JDSF Management Plan. When complete, the Final EIR will be reviewed and considered by the Director of CDF, and if found to be in compliance with CEQA, the Director of CDF will certify the Final EIR. Following certification of the Final EIR, the Board of Forestry will review and approve a JDSF Management Plan. The Management Plan approved by the Board will be consistent with the Final EIR. All mitigation measures developed in the Final EIR will be incorporated into the approved JDSF Management Plan."

Take your pick: In the Executive Summary version, who exactly approves the EIR is not really stated, but the Board gets to pick and choose among alternatives, so clearly the DEIR certification has not yet occurred. In the Page 18 version, the Director certifies the DEIR and the Board has the more or less ceremonial function of approving the FMP based on the approved DEIR. 73

73 This confusion should be clarified.

But getting to the point, with Gary Rynearson the Board of Forestry member being the President of the apparent, if not credited, lead contractor, how comfortable are other Board members going to be with expressing opinions that may differ from those expressed in the EIR? I have been on boards. I know how they work. With each major issue considered comes the calculus of whether it is worth causing trouble when it might affect an unrelated issue you care about. It causes a complication. And finally, how appropriate is it for one Davis political appointee (and timber industry representative) to be providing a supposedly "objective" CEQA review of the project of another Davis political appointee, the Director of CDF? I have no answers, but I do wish there were no issues here to raise.

Conclusion

We have identified many significant adverse impacts that would occur should the FMP be implemented as proposed. We have also identified many failures of the DEIR to provide information, identify impacts, and propose mitigations to avoid those impacts or reduce them to insignificance.

Many, if not most, of these issues have been raised repeatedly in the last decade. In the course of my trying to encourage people to comment on the DEIR there has been a very strong theme in reaction: *Why should I bother to do this again? They haven't paid any attention to the comments we already made. They are not going to pay any attention anyway.*

Reactions of this sort came from a varied group of people including: the California Department of Fish and Game, the UC Forest Advisor for Mendocino and Lake County, a number of former Citizens Advisory Committee (CAC) members, a member of the State Forest Advisory Committee, the head of the Campaign to Restore Jackson Forest, and one of the reporters for a regional radio station. Perhaps the most poignant reaction along those lines came from former CAC member Jim Grieg, a Registered Professional Forester who has been managing timberlands across California during a long career. He point blank refused to review the documents even if I provided them for him saying he was tired of wasting his time. I was distressed to discover that he had been on not one, but two, Citizens Advisory Committees regarding JDSF. There had been one ten years prior to the CAC with which I was familiar. I had no idea. Unfortunately, in Grieg's eyes the recommendations from the first committee

had no more effect than the recommendations of the more recent one. What has been gained from all this stonewalling? Nothing positive for Mendocino County, I am sure of that.

We urge you to revise the FMP and the DEIR. Your attention to our concerns, and to those of so many who have come before us, would be greatly appreciated.

Sincerely,

Kathy Bailey

Kathy Bailey
Forest Conservation Committee

List of Attached Exhibits:

A. Forestland Ownership Map
B. Hawthorne Option A, excerpt
C. MRC Option A, excerpt
D. CA Forestry Handbook, excerpt
E. Landsat close view
F. Landsat wider view
G. Combined Areas of Concern and Vegetation Map

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PO Box 256
Philo, CA 95466
707-895-3716

July 19, 2002

Christopher P. Rowney, Program Manager
Demonstration State Forests
California Department of Forestry and Fire Protection
Post Office Box 944246
Sacramento, CA 94244-2460

Jackson Demonstration State Forest
Draft Management Plan and DEIR

Dear Mr. Rowney:

For the record, please note that I have hand delivered submissions from several groups and individuals including Bay Area Coalition for Headwaters, Richard Gienger, SSRC, Jackson Owners Association, and Mad River Biology (copy of comments fed exed to you). I have done this because of the strict "received by" 5 PM, July 19, 2002 deadline. Because of the concern that US Mail might miss the deadline these organizations and individuals faxed or e-mailed their comments to me as I let them know I would be hand delivering Sierra Club's comments on July 19. Therefore, some of the submissions are either not signed or signed for them by me, with my initials.

These submissions represent the opinion of their authors.

Kathy Bailey
Sierra Club CA

Sierra Club JDSF DEIR July 18, 2002

3/6/00

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Exhibit B

Hawthorne Timber Company, LLC

Maximum Sustained Timber Production Assessment – Option A

I. INTRODUCTION:

The purpose of this document is to demonstrate the projected long term sustained yield and the balance of growth and harvest of timber products over time for Hawthorne Timber Company, LLC's (HTC) Fort Bragg Timberlands. The management goal of this analysis is to achieve maximum sustained production of high quality timber products as specified by the landowner, taking into account biologic and economic factors, while accounting for limits on productivity due to constraints imposed from the consideration of other forest values, including but not limited to, recreation, watershed, wildlife, range and forage, fisheries, regional economic vitality, employment and aesthetic enjoyment.[1]

Land Ownership vs. Land Management

The timber and timberlands evaluated in this assessment are owned by Hawthorne Timber Company, LLC. These timberlands are managed by The Campbell Group, Inc. DBA Campbell Timberland Management, Inc.. Campbell Timberland Management, Inc. is the plan submitter for Hawthorne Timber Company, LLC.

II. DESCRIPTION OF ASSESSMENT AREA:

The assessment area includes approximately 194,000 acres located primarily in western Mendocino County (see maps in Appendix A). The entire assessment area lies within the Coast Forest District as defined by the California Forest Practice Rules. For the purpose of this analysis, only the forested stand types constituting 191,581 acres were considered for timber management. These timberlands can generally be characterized as high-quality redwood and Douglas-fir forests, consisting primarily of younger seral stages. In addition to these younger seral stages there are substantial areas of unevenaged stands with larger trees over the landscape. These areas are primarily adjacent to Class I and II watercourses. The assessment area is comprised of three management districts, each district being a distinct ownership unit. For planning and analysis purposes, the ownership has been further subdivided into 18 watershed groups. These watershed groups are aggregations of generally contiguous individual Cal. watersheds within each district. They tend to be topographically and have similar management histories. Each watershed group is comprised of the State Planning Watersheds listed in Table 1 in Appendix A.

III. LONG TERM SUSTAINED YIELD (LTSY):

The Long-Term Sustained Yield (LTSY) estimate at the end of the planning horizon for this property based on the analysis described below is 133.9 MMbf/Year.

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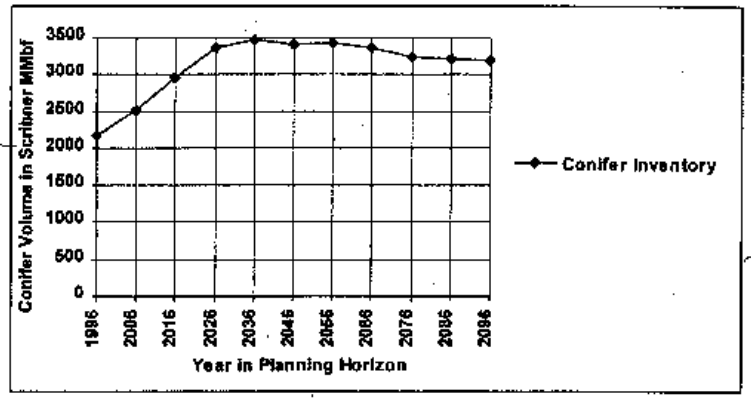
Figure 2-2. Annual Projected Standing Conifer Inventory Volume for the Fort Bragg Management Unit



10,496 MBF/yr
Ave.
end of period
15,513 MBF/yr

Volume Growth and Harvest Volume by WHR Type

Tables 2-7 and 2-8 display the projected volume growth for conifers and hardwoods, respectively, by period for all of the forested WHR types that occur on the management unit over the planning horizon. Most of the growth of both conifers and hardwoods occurs in the RDW3 WHR types.

Tables 2-9 and 2-10 display the projected harvest volumes for conifers and hardwoods, respectively, by period for all of the forested WHR types that occur on the management unit over the planning horizon. Most of the hardwood harvest volume over time comes from the RDW3 WHR types, while most of the conifer harvest volume comes from the RDW4 WHR types.

6,190,557
2,000,000,000

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Sierra Club JDSF DEIR 7/18/02

Exhibit C

Option A

Mendocino Redwood Company, L.L.C.

Revised February 29, 2000

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Mendocino Redwood Company Option A

Mendocino Redwood Company's (MRC's) stated purpose (see the company Web Site at www.mendocinoredwoodco.com) is to be a company that utilizes high standards of environmental stewardship and operates as a successful business. Since the company began 18 months ago, employees have been testing and implementing policies for the protection of non-timber forest resources particularly improved fisheries and upslope wildlife habitat.

These policies are reflected in the determination of Option A harvest levels in three ways. Available acres for harvest and total harvest are limited by the company's silvicultural policies. The trigger and retention requirements of these policies are incorporated in the calculation of Maximum Sustained Production (MSP). Acres available for harvest are also limited by constraining specific acres related to management goals such as protection of old growth, unique ecosystems, Marbled Murrelet habitat, Water and Lake Protection Zone (WLPZ) buffers, and scenic buffers. A third way policies are reflected in the Option A are with the limitations imposed by achieving targeted stand conditions. Harvest levels are set so increases in conifer stocking per acre, improvements in Wildlife Habitat Relationship (WHR) size classes, and increases in the number of trees > 32" diameter breast height (dbh) are met by the end of the fifth decade.

The Option A shows a transition on Mendocino Redwood Company (MRC) lands away from even-age silviculture. The company is targeting an increase in uneven-age silviculture (mostly individual tree and group selection) to 90% by the fifth decade. This goal is driven by the belief that uneven-age management is a better way to achieve a balance in the company's economic and stewardship objectives. The move to selection silviculture results in higher retention of trees per acre, less harvest disturbance and greater structural diversity within a forested stand. Uneven-age silviculture also results in less time between harvests in a given stand, and higher numbers of total acres harvested for a given volume of production. Consequently, Mendocino Redwood Company (MRC) is moving to lighter-impact logging practices as a part of this transition to uneven-age management. During 1998 Mendocino Redwood Company (MRC) harvested approximately 80% of its conifer volume for the year with the use of a cable yarder and the balance with tractor and helicopter. Compared to tractor, cable yarding techniques result in less soil disruption, less erosion potential, and less road and skid trail construction. The company will continue to use cable yarding to minimize soil and site disturbance, and expects the percentage of cable yarding to remain at or close to these levels over time.

The last section of this report details how Mendocino Redwood Company (MRC) will work with the California Department of Forestry (CDF) and other agencies to monitor the assumptions and projections contained in the Option A. The objective of this monitoring activity will be to determine if the ownership wide calculation of Maximum Sustained Production (MSP) is still valid given growth, inventory and non-timber forest value considerations. Each Timber Harvest Plan (THP) will link constraints in the Option A with actual on the ground conditions and silviculture used in the Timber Harvest Plan (THP). Any harvest activities that represent a variance from this Option A plan will be addressed in detail as to why the variance has occurred and any impacts to Long Term Sustained Yield (LTSY). Cumulative effects, unstable soils analysis, sediment capture, and other site-specific operational analyses will be addressed in individual Timber Harvest Plans (THPs).

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Mendocino Redwood Company

Option A

Assessment Area

This Option A covers all the forestlands owned by the Mendocino Redwood Company (MRC). The forestlands are comprised of approximately 232,000 acres situated in the western portion of Mendocino County and the northwestern portion of Sonoma County in the redwood ecoregion of northwestern California. MRC began operations with the purchase of these lands on June 30, 1998.
MRC's forestlands are situated south of the Humboldt County line, west of highway 101, north of the Willow Creek Road that runs from the town of Occidental to the mouth of the Russian River in Sonoma County, and east of the Pacific Ocean. The forestlands are located in three distinct areas: the Rockport Tract (39,188 acres) just south of the Humboldt County line; the major ownership block (179,839 acres) south of the headwaters of the Noyo River, north of the ridge separating the Garcia from the Gualala River in southern Mendocino County, east of the Pacific Ocean, and west of highway 101; and the Sonoma County forestlands (12,573 acres) in the Willow Creek and Wheatfield Fork watersheds just east of the Pacific Ocean. The forestlands are in the watersheds of the following significant rivers: South Fork of the Eel, Noyo, Big River, Albion, Navarro, Greenwood Creek, Garcia, and Russian.

Most of the MRC forestlands would be classified as second growth stands of redwood and Douglas-fir, mixed conifers and hardwoods, or mixed hardwoods. Elevations within the MRC forestlands range from sea level to 3,400 feet. Average daily temperatures range from a high of 66.5 degrees (Fahrenheit) during July to a low of 43.6 degrees (Fahrenheit) in December. Annual precipitation ranges from 50 to 80 inches. MRC's forestlands lie within the rugged Coast Range province that is underlain by marine sandstones of the Franciscan Formation.

Companies such as the Union Lumber Co., Albion Lumber Co., Mendocino Lumber Co., Rockport Redwood Co., L.E. White L.C., Holms Lumber Co., and Southern Pacific Land Company were some of the early owners of what now comprise MRC forestlands. Harvesting started at the mouths of watersheds and progressed up-stream and up-slope to the ridgelines. Initial logging activities generally consisted of burn, clearcut, and burn again. Logs were transported to mills via the river systems. Later entries into these forests, and forests further inland were commonly accomplished with steam donkeys and railroads. During the 1940s, crawler tractors and trucks replaced the railroads. Clearcutting continued to be a common harvest method. In response to tax laws in the 1940s and 1950s, many stands were managed to remove 70% of the stocking, typically the larger, healthier trees. Subsequent owners managed their lands to maximize fiber output and the success of their mill investments. As a result of this ownership history, a significant portion of the MRC acreage is at reduced levels of conifer stocking with trees in young age classes.

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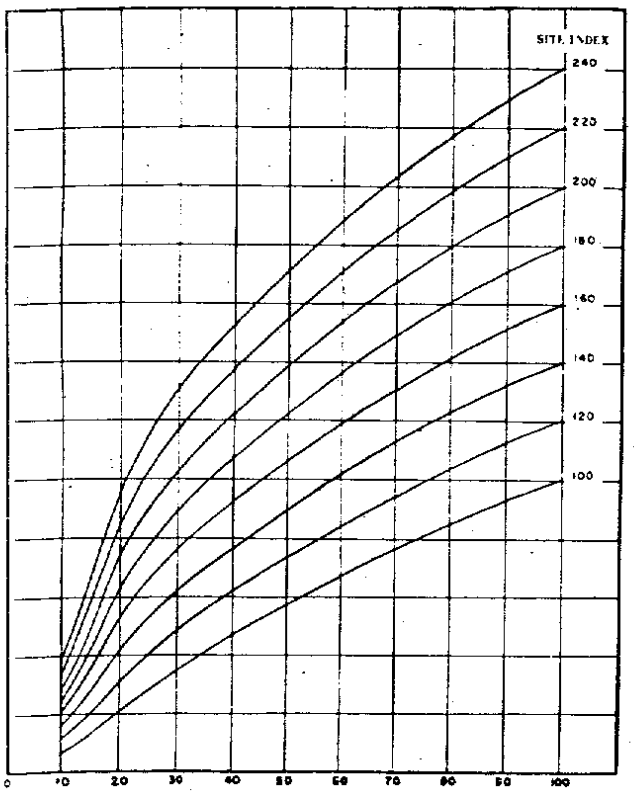
Table 1. Modeled Inventory, Growth and Harvest by Decade

Option A

Mendocino Redwood Company Ownership

Species Group	Decade	Beginning Inventory (MBF)	Growth During Decade (MBF)	Harvest During Decade (MBF)
All Species				
	1	2,770,200	912,600	515,500
	2	3,167,300	1,136,900	696,100
	3	3,608,100	1,405,200	818,900
	4	4,194,400	1,592,000	924,800
	5	4,861,600	1,642,500	951,800
	6	5,552,300	1,658,100	1,029,800
	7	6,180,600	1,649,600	1,067,100
	8	6,763,100	1,622,300	1,098,100
	9	7,287,300	1,613,300	1,101,500
	10	7,799,100	1,586,800	1,096,700
Conifer				
	1	2,264,700	655,300	418,100
	2	2,501,900	800,300	511,000
	3	2,791,200	1,029,800	599,900
	4	3,221,100	1,217,800	630,600
	5	3,808,300	1,306,200	680,200
	6	4,434,300	1,358,300	794,600
	7	4,998,000	1,385,700	885,500
	8	5,498,200	1,379,900	958,100
	9	5,920,000	1,380,300	999,200
	10	6,301,100	1,365,300	998,200
Hardwood				
	1	505,500	257,300	97,400
	2	665,400	336,600	185,100
	3	816,900	375,400	219,000
	4	973,300	374,200	294,200
	5	1,053,300	336,300	271,600
	6	1,118,000	299,800	235,200
	7	1,182,600	263,900	181,600
	8	1,264,900	242,400	140,000
	9	1,367,300	233,000	102,300
	10	1,498,000	221,500	98,500

**Note: Tabular results of FREIGHTS and linear program, these numbers reflect the expected harvest plans and resulting inventory and growth.



ure A-1. Site index values of dominant redwood by height and breast-high age classes.

U.C., Lindquist and Palley, 1963

Table A-42. Yield table, young-growth coast redwood stand, all species, per acre, board feet, International ¼" rule, trees larger than 10.5 inches dbh to an 8-inch top.

Age (years)	Site index (feet)							
	100	120	140	160	180	200	220	240
20	...	600	2,300	7,000	14,500	23,900	35,000	46,500
30	900	3,100	9,500	19,600	34,500	52,300	71,600	93,200
40	2,800	8,800	20,400	36,900	57,900	82,100	108,700	137,500
50	7,300	16,500	33,700	55,300	82,000	112,700	146,000	181,300
60	14,400	27,400	48,900	74,500	106,100	142,100	180,900	221,900
70	22,800	40,400	65,000	94,500	130,400	170,900	214,400	250,500
80	32,400	53,700	81,500	114,300	153,500	198,200	244,800	293,500
90	44,000	67,400	98,300	133,800	176,400	224,100	273,600	325,700
100	55,760	81,300	114,600	152,300	198,100	248,500	301,700	357,600

U.C., Lindquist and Palley, 1963

Table A-43. Yield table, young-growth coast redwood stand, all species, per acre, cubic feet, trees larger than 4.5 inches dbh to a 4-inch top.

Age (years)	Site index							
	100	120	140	160	180	200	220	240
20	200	450	1,000	2,270	3,990	5,910	7,860	9,940
30	500	1,050	2,500	4,400	7,040	10,000	13,000	16,200
40	1,000	2,300	4,500	7,250	10,550	14,250	18,000	22,000
50	2,100	3,800	6,800	10,100	14,060	18,500	23,000	27,800
60	3,600	5,820	9,220	12,960	17,450	22,480	27,580	33,020
70	5,200	8,000	11,750	15,880	20,820	26,380	32,000	38,000
80	6,900	10,140	14,190	18,640	23,990	29,980	36,060	42,540
90	8,800	12,260	16,580	21,340	27,050	33,450	39,940	46,860
100	10,600	14,260	18,880	23,940	30,010	36,820	43,720	51,050

U.C., Lindquist and Palley, 1963

Exhibit D

Sierra Club JDSF DEIR July 18, 2002

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707-895-3716

July 18, 2002

Christopher P. Rowney, Program Manager
Demonstration State Forests
California Department of Forestry and Fire Protection
Post Office Box 944246
Sacramento, CA 94244-2460

Jackson Demonstration State Forest
Draft Management Plan and DEIR

Dear Mr. Rowney:

I am submitting the following items for the record in addition to the Sierra Club letter and Exhibits sent separately:

Letter published in the Ft. Bragg Advocate News from five members of the former Citizens Advisory Committee for JDSF.

September 4, 2001 letter to you from the California Department of Fish and Game regarding the draft JDSF Forest Management Plan.

July 27, 2001 to CDF Director Andrea Tuttle from Greg A. Giusti, UC Forest Advisor for Mendocino and Lake Counties. This letter should have been included in the scoping comments in DEIR Volume II, but was omitted.

Copy of Forest Practice Rule 1090.5 regarding the requirements for approval of a Non-industrial Timber Management Plan (NTMP).

Please include these in the record. Thank you.

Kathy Bailey

The CAC Report: A compromise that works for Jackson State Forest

Submitted by
Lin Barrett, Greg Giusti, Henry Gundling,
Art Harwood and Monroe Robinson

Community Forum

Recent discussion about the fate of Jackson Demonstration State Forest has been framed narrowly: Should we restore the entire forest to an old growth condition? Or should we maximize logging and hope the timber production will save GP's Fort Bragg mill and its jobs? The outcome of the debate will determine the future of the only significantly sized, publicly owned coastal forest north of the Golden Gate Bridge and south of Humboldt County.

Is there room for compromise about this 50,000-acre forest? We believe the answer is yes. The terms of that compromise have already been articulated in the Report of the Citizens Advisory Committee on Jackson developed by a broadly representative panel appointed by then California Department of Forestry Director Richard Wilson. After meeting for more than a year, the CAC presented its recommendations in December 1998. The CAC proposals would probably have already been implemented if not for the loss of momentum that occurred during the change in administrations.

The CAC report recommends reasonable guidelines that balance sustained yield logging with environmental protection while encouraging recreation opportunities that could help invigorate the local economy. The CAC's overriding recommendation regarding logging is that Jackson Forest should demonstrate all-aged timber management. This selection logging system, widely used by non-industrial timberland owners, keeps or develops some trees of all ages while logging to improve timber quality, yield, and income.

On the environmental side, the CAC recommends designating the Woodlands Special Treatment Area adjacent to the State Park property, as an area where logging would be restricted. Exceptions for ongoing forest demonstrations would be allowed.

The report recommends enhanced protection for creeks and calls for elimination of most logging next to Jackson's salmon streams. This is in line with both the recommendations of the National Marine Fisheries Service and the guidelines in use by the U.S. Forest Service. Smaller streams at Jackson would also get more protection than standard Board of Forestry rules mandate.

On recreation, the CAC recommends returning more of the proceeds generated by Jackson's logging program to investment in the forest's infrastructure. Rocking roads would be a priority. Road work also generates jobs at the same time it prevents stream siltation and provides public access to the public's forest. Trails would also be expanded and marked, in conjunction with State Parks where feasible. A recreation planner would be hired.

The CAC also suggested ways the public could provide periodic feedback about forest management issues. Other public forests have similar mechanisms. For instance Soquel Demonstration State Forest near Santa Cruz has an advisory committee that includes citizens, elected officials, and forest management professionals. That committee provides broad oversight without getting caught up in micro-management.

On other items of pressing local concern, the CAC recommends retaining all old growth trees. As this is a miniscule component of the forest, impact on logging revenue would be minimal while in terms of preserving a bit of our county's heritage, the value would be high.

The development of a scientific monitoring program is also recommended. Financial constraints have prevented achieving this goal so far. Investing more of the proceeds back to the forest is a necessary first step. Thousands of forest landowners, both large and small, would benefit from clear information about how specific practices affect the forest.

Finally, what about herbicides? Reflecting the broad-based composition of the committee, the CAC Report does not call for a complete ban on their use. Rather, it recommends stopping the use of chemicals as a means of site preparation or timber stand improvement. With the elimination of clearcutting, both of these herbicide uses will become unnecessary over time. Regarding control of exotic vegetation like gorse and pampas grass, the CAC called for a three-year herbicide moratorium while instituting "a program to aggressively explore and develop alternative means of vegetation control while the moratorium is in effect."

The CAC's year plus of work presents us with an opportunity. We urge the people of Mendocino County and its representatives to turn away from a win/lose mentality and support the CAC recommendations as a way to resolve a wide variety of concerns. Jackson Demonstration State Forest is a big place and we can do a lot there if we work together.

Lin Barrett, Greg Giusti, Henry Gundling, Art Harwood and Monroe Robinson were members of the Jackson Demonstration State Forest Citizen Advisory Committee.

State of California

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Memorandum

To :Mr. Christopher Rowney,
Department of Forestry and Fire Protection

Date :September 4, 2001

From :Larry Week, Chief, Native Anadromous Fish and Watershed Branch
Department of Fish and Game

Subject :April 13, 2001, Draft Jackson Demonstration State Forest Management Plan

Thank you for giving us an opportunity to review and comment on the April 13, 2001, Draft Jackson Demonstration State Forest Management Plan during this scoping period. Attached are our detailed comments by chapter and page. These comments represent input from the Central Coast Region and Sacramento Headquarters staff. If you have any questions regarding these comments, please contact Dr. Marty Berbach at 916-327-8839 or e-mail mberbach@dfg.ca.gov.

cc: Mr. Rob Floerke, Regional Manager, Central Coast Region
Mr. Brad Valentine, Central Coast Region
Ms. Esther Burkett, Habitat Conservation Planning Branch
Dr. Marty Berbach
Mr. Kevin Shaffer

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Department of Fish and Game

Comments on April 13, 2001 Draft Jackson Demonstration State Forest Management Plan

INTRODUCTION

General Comments:

Chapter 4 "Research and Demonstration" should integrated into Chapter 2 "Current Management Situation" and Chapter 3 "Desired Future Conditions and Planned Management". Otherwise it appears as though research and demonstration functions separately from current and planned management.

Releasing the draft management plan at this time seems awkward. Page 2 indicates that CEQA "...require[s] an analysis of a Forest Management's Plans potential environmental Impacts" and that an EIR "...will be prepared which describes the management alternatives ... the preferred plan has been developed in this Forest Management Plan." The timing seems reversed. The EIR should provide several viable alternatives that are evaluated at a reasonable level so that costs and benefits can be compared and the preferred alternative selected. Then the preferred alternative should get the more detailed description and management plan developed for it. By reversing the progression, the viability of other reasonable alternatives is diminished because so much work has already been applied to this plan.

Specific Comments:

Page 3. As a matter of accuracy, the Northern California steelhead ESU was listed August 7, 2000, not "during the 1990s".

Page 3 suggests that "...timing of potential changes cannot be predicted, it is not appropriate to institute a fixed schedule of [management] plan reviews." We believe, however, that having a fixed schedule wherein you explicitly ask yourself and answer in a public forum the question if conditions have changed enough to merit a management plan revision is appropriate. Simply waiting and relying on "staff familiar with the contents of the plan and alert to the external influences that may reduce the plan's relevance" risks delayed consideration of new and more issue-specific management practices. The current draft is a good example. It seems likely that the listing of any one of the several species mentioned at the top of the page might have triggered a re-evaluation in its own right, still its been nearly 2 decades since the prior edition. The above-stated trigger for re-evaluation seems to be countered under "Revisions and Amendments" (page 4) where the plan states "the Forest Manager will review conditions of the lands covered by the Plan every five years to assess the need for Plan revisions." This timing seems appropriate, but to repeat, this review should be public, perhaps a report to the Board of Forestry, and detailed. Under that same section, the plan notes that public notification requirements and adherence to CEQA procedures apply to any

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significant Plan amendments. The public should be made aware of any plan amendments even if they are deemed to be insignificant. This could be included in the Forest Manager's 5-year review.

Page 3, under plan implementation, please identify the disciplines that will be used to ensure that "projects [not just timber] will continue to be planned and evaluated through an interdisciplinary process." We highly recommend that disciplines should include plant, wildlife and fishery biologists.

The Management Plan discusses that budget plans, appropriations, and allocations may or may not meet the budget requirements to carry out the approved Forest Management Plan. In this case, the Unit Chief will change the implementation schedules. However, changing the schedules may not be adequate to offset impacts. It will be important to back off on impacting activities if enhancement, mitigation, improvement, and/or assessment activities are reduced.

CURRENT MANAGEMENT SITUATION

Page 12. Permits issued by Jackson Demonstration State Forest (JDSF) allow the harvest of "Minor Forest Products". A general question regarding this use is the CEQA clearance used by CDF in this permitting process. While it seems likely to us that these activities could be conditioned adequately to be cleared through a Mitigated Negative Declaration, still those conditions should be reviewed and adjusted based on input from CEQA responsible agency. If existing CEQA documents covers these programs, those should be cited in this section. Specific issues that DFG recognizes for which conditions could be developed relate primarily to the salvage and firewood programs. There should be limitations on maximum diameter size harvested and restricted locations (e.g., no more than x distance from a road edge). The plan needs to identify how adherence to the permitting is enforced; the staffing applied to it, the consequences to violators, and the measures used to mitigate violations. JDSF should include these resources in its monitoring program; especially those minor forest products that are subject to high demand or are slow to recover (e.g., salvage saw logs, firewood, and mushrooms).

Page 13. The draft management plan notes that Parlin Fork Management Area plan was approved by CDF in 1992. Was that management plan subject to CEQA review, and if so, what was the clearance tool (Negative Declaration or EIR)? Might there have been significant changes (e.g., species listings) that might necessitate a revision of it? Copy of Parlin Fork Management Plan, or at least a synopsis of its allowances and restrictions should be appended to the management plan to better enable a full assessment of potential impacts when the CEQA document is drafted.

Page 14. Pygmy forest is identified as unique and declining. The draft management plan should indicate why it is declining, and identify a) what role, if any, JDSF is playing in that decline, and b) what role, if any, JDSF can play in stabilizing and reversing that decline.

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Page 15. The draft management plan notes that a detailed habitat type map is scheduled to be produced within the next few years. We are supportive of this goal, and suggest that it be compatible with the California Wildlife Habitat Relationships (CWHR) program. Habitat typing should be at least as detailed as CWHR. If its resolution is finer (e.g., tree diameter, canopy cover), break points should enable collapsing into CWHR categories.

Page 16. The draft management plan defines snags as those dead trees greater than 11 inches dbh and ≥12 feet tall. We find these values to be less than desirable in a managed forest. The draft management plan recognizes that these are the "**minimum** dimensions that afford potential value to **most** vertebrate wildlife species" [emphasis added]. We believe that managing for the minimum values may be a risky strategy for wildlife resources. Further, we believe that managing for most vertebrate species is not appropriate, especially in terms of forest habitat elements. Rather, JDSF should be providing the appropriate sized habitat elements for all the naturally occurring species. The discussions about minimum sizes as a management goal should start no lower than 24 inches, guided by the size and age of dominant tree species that show signs of decline and mortality. Managing for snags of a given diameter will likely include smaller snags on the landscape.

After determining the size goals, the next question is the density and distribution goals. The draft management plan reports that the current number is less than that desired for special wildlife concerns areas. We believe that a goal of 2 snags per acre comprised of trees >24" is desirable. The goal specified for the special wildlife concerns areas appears to appropriate, except the diameters should reflect the size potential of the dominant trees in those locations.

The distribution of snags is discussed for the special concern areas but not the remainder of JDSF. We recommend that snags should be distributed randomly in clumps and individually to provide habitat for all the wildlife species that occur in central Mendocino County. Snags should be clumped lower on slopes and individually higher on slopes. The snag per acre goals should be averaged over a standard area (e.g., a number of acres, a second order watershed). This would result in diversity of snag density and distribution among different assessment units that assures cavity-nesting opportunities for wildlife.

"Recruitment" (contrary to the title) or snag condition is not addressed in this section. Please address how snags will be replaced over time. We recommend green wildlife tree retention among the dominants that includes a tree species mix and condition that will result in mortality over time. Thus, hard and soft snags will be generally available on a near-continuous basis, and not in sporadic episodes separated by decades that result in snag deficiency.

Large woody debris (LWD) value and description is briefly mentioned. Goals for size, distribution, and recruitment should be clearly stated. We recommend that the goals reflect the biological conditions of JDSF (i.e., species mix, size, and density).

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The dead wood elements of the forest are very important for wildlife and fisheries habitat. Much can be learned about the wildlife use of dead wood. Deviations from the standard goals (more and less) should be considered in the context experimentation and adaptive management.

Pages 17-18 (Table 1). The method and resources used to develop the list of "species of concern" needs to be documented. In addition, the draft management plan should identify all the other species of concern within the vicinity of JDSF, and indicate why they were not included in Table 1. The paragraph describing the species of concern concludes that JDSF will develop appropriate management strategies for those species as necessary. Please indicate that DFG will be consulted or participate in the crafting of these management strategies.

Page 22. Under "Fluvial Morphology", the draft management plan states, "**the most significant impact** to stream channels located within JDSF has been the widespread removal of LWD ..." (emphasis added). While overzealous wood removal has had dramatic impacts on stream channels, we are unaware of any ranking of relative impacts. Splash damming and yarding in watercourses have had serious and continuing impacts to watercourses. The elimination of riparian trees through timber harvest has likely resulted in decreased recruitment of LWD to channels and has prolonged and amplified the negative effects of the excessive LWD removal. This statement in the draft management plan deserves a citation so that one can understand the severity and the longevity of the relative impacts. The Sindel (1960) report is an obvious citation with historical context. CDF's publication by Arvola (1976:43) also provides a good historical overview of why stream clearance began in the 1950's.

Pages 22-23. Under "Current Condition of Aquatic Resources", please cite the sources used to derive the facts and conclusions presented.

Page 24. We recognize that JDSF has greater stocking than of its adjacent private landowners. However, does this necessarily construe "a proportionately greater allocation of forest resources towards relatively rare vegetation types and wildlife habitats than would otherwise be legally required from surrounding private timber lands"? It is not clear that the current condition is due to this reason, or whether it is due to JDSF having a better approach to achieving "long term sustained yield of high quality timber products" than its neighbors.

Page 25. For clarity, under "Recreation and Personal Forest Products Collection", we recommend that the statement "...forest is open for public access" be changed to "...forest is open to the public." Removing the word "access" should dissuade those who want vehicular access on closed roads, or off-road vehicle enthusiasts from making their own roads.

Page 26. Under "Research and Demonstration", we note that to date there have been but a few demonstration projects and very little research directed at "...improving fish and wildlife habitats." We anticipate that will change in the future.

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Page 26. We are pleased to see that JDSF recognizes its role for providing "Regional Natural Ecosystem Responsibility". DFG is willing to work with JDSF to work towards that goal. This includes reintroducing fire as an ecological process that can be so important in sustainability of systems (e.g., pygmy forests) and "fire-proofing" fuel-laden late-seral preserves.

Page 27. Under "Public Concerns and Their Effect on Management" we note that several of the activities proposed (e.g., construction campgrounds, hiking and horseback riding trails) have the potential to impact fish and wildlife resources. The draft management plan should specify that each activity would require CEQA documentation. Please consult with responsible agencies to develop mitigation measures such as siting, sizing, and use restrictions.

Page 29. Under "Endangered Species", we applaud JDSF's intent to "maintain and create habitat to contribute to the viability of regional populations." We would hope for two additional steps: 1) increase quality and quantity of habitat (but maintain current level where there is no other choice), and 2) JDSF work with DFG proactively to a) document the presence of sensitive species on the forest, and b) promote increasing the numbers (e.g., through attracting and/or introduction). Please present a list of rare, threatened or endangered species are known or expected to occur on JDSF.

Page 30. Under the "Implement a Road Maintenance Program to Serve as a Public Education Tool", we recommend that JDSF work with DFG staff to establish monitoring and assessment programs to assure feedback to the program that include costs and benefits to fish and wildlife.

Under "Even-aged Management", the draft management plan states that even-aged management will be restricted to specific management units and that structural elements (snags and LWD) of value to wildlife will be retained. We agree that even-aged management is appropriate in some situations and under some constraints. The retention of wildlife structural elements is one of the constraints. Another constraint is to assure that recruitment potential with green tree retention will continue to recruit for snags over the life of the rotation. This needs to be a management goal in uneven-aged silviculture as well. A thrifty all-aged (sized) stand may be pleasant to look at, but may have little habitat value.

Page 30. Under "Demonstration and Research Applicable to Private Landowners", we concur with the intent to increase the research and demonstration on JDSF. We encourage that this include increased scientific rigor. We recommend that DFG, Review Team agencies, and other specialists as necessary be involved to review and comment on research or demonstration proposals. Evaluation of results may require long periods so that demonstration needs to explicitly consider both short-term and long-term results.

Page 31. Under "promote Hardwood Development as a Forest and Timber Resources" the draft management plan reads as if JDSF does not intend to continue to create a market

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for hardwoods. The section describes how JDSF will manage hardwoods for their habitat element value, but not as a dominant tree type. The draft management plan states that where there is an overabundance of hardwoods, these stands will be restored to a conifer-domination. We believe that in some sites and conditions, hardwoods may be naturally dominant. Are there any of these locations on JDSF? How will JDSF assess whether a conifer site is indeed being restored as opposed to a hardwood site being converted? Relative to true oaks (*Quercus* spp.), we recognize that Tan Oak is widespread and common, and its value as mast for most species not as well documented. The draft management plan should specifically protect true oaks, whether dispersed individual trees or stands, from conversion or restoration attempts.

Under "Management Adjacent to Mendocino Woodlands", the draft management plan forecasts two limited timber harvest plans in the Special Treatment Area within the planning period. What is the "planning period"?

Page 32. Under "Herbicides", we believe that control of alien plants and to a lesser extent competing natives (e.g., blue blossom), is an issue worthy of study and monitoring. It is important to document impacts of pest species and the control efforts upon timber, fish and wildlife resources.

Page 39. Under "Staffing and Budget", is there a plan to add a permanent biologist position to JDSF? The need seems obvious.

Page 40. "Exotic Weed Species" seems out-of-place in the document. Does this belong on page 58? A risk of new exotic species becoming established on JDSF over the next 10-20 years is reported to be "very high." How was this conclusion derived? List the exotic plant species and the anticipated actions to control them.

Chapter 3. DESIRED FUTURE CONDITON AND PLANNED MANAGEMENT

Page 41. The draft management plan states that JDSF is planning to follow an Ecosystem Management Approach. Such an approach should limit management actions so that they don't exceed the ecosystems ability to recover and to provide ecosystem services. Under ecosystem management, the level of timber harvest permitted should not be derived from a top-down approach of needing to harvest a given amount in any time frame. In recognition of this, outputs should normally be worded (using timber as an example) "no more than *xyz* will be harvested per period." There is an opportunity for JDSF to incorporate research and demonstration into this section.

We find general agreement with the importance of research on the effects of habitat fragmentation, connectivity, and corridors for wildlife in the redwood region. However, we note two characteristics of such work about which JDSF and other readers should be aware. First, JDSF may not be large enough to examine fragmentation and corridors for a multiple, wide-ranging species. This limitation is more apparent with the use of replicates and controls. Second, robust results will likely require long a period for many

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species. Third, there is more to Ecosystem Management than habitat fragmentation and connectivity.

Page 42. The draft management plan indicates the approach to maintaining biological diversity. We agree that a blend of silviculture, rotation ages, reserves, and habitat attributes are important tools. We further agree that maintenance and development of habitat for late-seral associates are premier management concerns. But there is more to managing for biological diversity than silvicultural practices and retention areas. This includes investigating the role other disturbance regimes such as fire or severe storms.

Under Watershed Level Planning, the draft management plan should be more explicit in how it will "consider" the spatial context of the vegetation polygon when selecting the stand for management. What might be some examples of how JDSF will use spatial analysis to decide when to select a polygon for management?

Pages 42-43. Under "Stand Level" planning, how will thinning and partial cutting create or maintain snags? How will direct damage, artificial creation of snags, or retention of dominant green trees of various stages of decline assure future recruitment? Also under this section, please recognize that "goosepens" (large trees with basal hollows) and chimney trees (large tress with burnt hollow cores open to the top) are very important wildlife elements and every effort should be made to protect these during land management activities. These are old growth structural elements that are not currently being recruited or created. We would welcome working with JDSF in a demonstration project designed to test techniques to create such elements and the effectiveness of those efforts.

Finally under this section, we note that "non-catastrophic mortality" should be retained not only in those areas identified, but also more generally across the forest. Salvage should not be pursued a) where stands and areas (perhaps based on second order watershed analysis) are deficient in down logs relative to the goals of the draft management plan, or b) more than 100 feet from an existing haul road.

Page 43. Under "Species Level" planning, we recommend that reintroduction and habitat restoration be added to include proactive measures to bring extirpated species back to the region. We would look forward to working with CDF on this progressive measure.

Page 44, Table 4. We applaud the concept of planning and implementing ecosystem management at various landscape scales.

Page 46. Under "Desired Distribution of Forest Structure Conditions", we appreciate the goal of retaining trees in even-aged stands to provide a legacy of wildlife habitat elements. We question the even-aged age distribution described at the end of the paragraph. It uses conditions at the end of a 100-year period. This would be useful if it indicated the maximum amount of forest that might be in young, even-aged stands over the 100-year horizon. Are stands up to 150 years of age congruent with the proposed

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rotation cycle(s)? Does the draft management plan include any of the reserves in the acreage?

Under the same section (and page), we also appreciate that JDSF recognizes the value of preservation as one of the tools for conserving wildlife and wildlife habitat. JDSF is proposing to retain current un-entered stands to manage around these stands to enhance late-seral characteristics. The draft management plan states that the late-seral character stands will amount to 22 percent of the forest, a value that we find desirable. However, we are concerned that that percentage includes WLPZs that, due to their narrowness, have somewhat compromised habitat value for species associated with late-seral forests. There is a high edge effect with WLPZs that pass through even-aged management units for the first several decades following harvest. We would like to see approximately the same goal for late-seral forest exclusive of WLPZs in even-aged management compartments. This might be achievable by managing more of the forest (some of the remaining 71 percent) with a goal other than "…for sustained high levels of timber production…", i.e., multiple rotation on even-aged stands, larger tree size and less frequent entry's on uneven-aged stands.

Page 47, Table 6. Please present the WLPZ acres separately from late seral acres and percent.

Page 48. Under "Silvicultural Allocation Plan, the draft management plan notes two objectives of the allocation plan, both of which we find laudable and at least in part achieved and /or appropriate. We would add a third goal to the allocation plan to safely manage the wildlife resources during timber harvest. This goal is based on applying our knowledge of ecosystem dynamics and management, and strives to mimic natural habitat distribution patterns and disturbance effects and regimes. The goal would also attempt to move away from activities that differ markedly from natural disturbance patterns and dynamics. Using fire as the disturbance regime that drove the forest, this third goal then might call for a realignment of the silvicultural units such that lightest harvest, habitat element goals, reentry cycles or rotation ages would be the most common low on the slopes. High on the slopes, the intensity of management and the retention goals of habitat elements would be the least constraining, and intermediate levels on the mid-slopes. While consistent with the draft management plan's current allocation in large management blocks, the boundaries would change. We recognize that your current allocation is already in place, but believe that this might the time to evaluate how to go about adjusting the scheme to better reflect our understanding of wildlife habitat drivers and dynamics.

Page 49. Under the same section, the draft management plan proposes that a "a range of rotation ages will be implemented and evaluated." The plan describe those rotation ages, and assure that the range includes a long enough period that some areas can truly achieve late seral status such as twice the economic rotation age. The plan proposes a "range of selection parameters including the tree size managed for, and the "q" factor." On Page 50, the plan states that the uneven-aged prescriptions would be adjusted on a "site-

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specific basis" to demonstrate silvicultural options, to evaluate wildlife habitat values that would lead to a wider range of parameters than one based on silviculture.

The other goals of the allocation that provides for "side-by-side comparisons" and replicates in different geographic portions of JDSF are desirable.

Page 50. Under "Uneven-aged Management", the draft management plan states that these units were selected to minimize potential conflict with recreation, private land (urban & suburban uses), and major transportation system buffers. While we recognize the goals of so doing, these assignment criteria lead to allocation of this type of silviculture adjacent to areas where wildlife habitat values are compromised to some extent by the neighboring uses.

Page 51. The draft management plan states that group selection will create stands with a large amount of structural diversity within stands but little between stands. It is good to have the amount of between-stand variability enhanced by changing the parameters of uneven-aged management (as described above), by changing the opening size, and increasing the range of the number of age classes (and subsequently tree size and length of time to "regulation").

The draft management plan states that the Forest Practice Rules define group selection as openings between 0.25 to 2.5 acres, yet notes that in the 14 Gulch compartment, group openings will be as large as 5 acres. Please clarify this apparent discrepancy.

Pages 52-53. Under "Even-aged Management", we agree that the amount of regeneration harvested should be constrained by cumulative effects upon watershed (e.g., aquatic habitat values) and terrestrial resources and to achieve habitat diversity. We note, however, on many forest lands that "growth less than expected" often controls such decisions. The best way to avoid such problems is through a multi-faceted strategy: a goal for minimal amount of late-seral habitat (discussed above) on a landscape and watershed basis, manage non-late-seral stands so that they provide some of the values of late seral forests (e.g., ensuring habitat element presence and recruitment in uneven-aged stands), permitting even-aged stands to exceed the CMAI for a time prior to harvest, and ensuring reasonable presence and recruitment potential of habitat elements in even-aged stands. We believe that the "reserve-from" of even-aged management should be used nearly exclusively in order to assure habitat element availability over the rotation age. Further, we believe that a reasonable portion of lands allocated to even-aged management should be permitted to stand for several decades after reaching CMAI to enable them to provide late-seral habitat value for some time prior to be harvested. We like to see rotation age varied by site class, but would like to see the range increased at the older end to assure that some stands in "areas allocated to financially viable forest management" are providing late-seral values prior to being harvested. Such management can augment the reserves' intended functions and act as a back up should the reserves be impacted by a severe wildfire.

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Page 56. Relative to modification of the short-term harvest schedule, we understand that there might be many reasons to modify your short-term plans. But we are concerned with the concept that it might be modified as a result of 'adaptive management.' We find this unlikely because adaptive management implies 'learning by doing' with the 'doing' undertaken with an experimental design and the resulting monitoring and analysis feeding back and modifying the plan. It seems unlikely that there can be much in the way of adaptive management results over a 5-year period that would have the power to drive a modification. Rather, we believe adaptive management in most cases will not drive a modification to the plan for at least 5 years and more than likely 10-20 years. The term adaptive management should not be interchangeable with "changing your mind."

Under "Special Concern Areas", please include DFG in the stages of determining the action's necessity and planning stage for undertaking any management activities where the purpose of the special concern area is biological.

Page 57. Under "Species Mix" is a brief discussion regarding hardwoods. The draft management plan should specify goals to assure that the management against hardwoods does not cause significant impacts. Measures might include have minimal basal area goals by species based on a stand, a second order watershed, or some other geographic area.

Page 58. Under "Exotic Species", please ensure that DFG is invited to participate during the stages of determining the necessity of introducing natural enemies, and planning the project and monitoring the results. We especially like the approach of timely reestablishment of native vegetation in densities that might preclude or minimize exotic species infestation. Regarding planned action #2, we encourage the draft management plan to use locally adapted native herbaceous plants in place of "high densities of native conifers" to help assure that some of the benefits of disturbance (early successional conditions) are not overly truncated by moving the area immediately into an unthrifty seedling/pole dominated stand.

Pages 59-60. Under "Old-growth Stands and Trees", the draft plan does not justify the 48 inch DBH standard. A detailed discussion of the justification for this standard is needed with appropriate references cited. Differences between definitions of old-growth *redwood* forests vs. old-growth *Douglas fir* forests (where a 32 inch DBH standard is used) should be discussed and contrasted. Specific references for the 48 inch standard are needed in this discussion to offset other language in the draft plan (page 14) which states: " "Old-growth" as a forest condition has not been specifically defined..."

The definition on pages 59-60 and in the glossary on page 111 refers to individual *trees*, and not an old growth forest *stand* with multiple canopy layers and large diameter dead and down material. Why this distinction between old-growth trees and stands was made should be clearly articulated. Forest management goal 3 listed on page 5 would indicate more emphasis on stand characteristics and ecological processes on a scale exceeding individual tree designation. The two-acre minimum old-growth stand size on page 60 also needs discussion and references to justify the standard.

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Another old growth characteristic, Item c, "Platform branches 8" or greater in diameter" is also not discussed or referenced. Since tree branches are not commonly inventoried or quantified during forest stand assessment work, it is unclear how this standard will be assessed or utilized in the field.

Pages 60-61. Under "Recruitment of Late-successional Forest", the draft management plan notes that JDSF will manage for late-successional forest characteristics in several places (e.g., augmentation areas and Mendocino Woodlands. Management might be undertaken via selection harvest to emphasize the development and retention of large trees. The goals also need to identify large snags, large LWD, and large branching structure as features to protect and to manage for increased presence. The section finishes with a commitment to manage forest areas to achieve recruitment of old-growth-like trees, but does not identify those areas or the abundance of such trees. Outside of specific areas managed for late-seral character, recruitment of individual trees into old-growth-like conditions should be goal for JDSF and could be incorporated into the snag / LWD retention / recruitment goals.

Page 61. Under "Pygmy Forest", we believe that the draft management plan should identify all threats to this uncommon vegetation and habitat type, and identify measures such as ecological fire to enhance its management.

Under "Hardwoods" we are particularly concerned with the retention of true oaks.

Page 62. Under "Snag Retention, Recruitment", as stated above, we believe the diameter and size distribution should be based on site-potential. The use of a 160-acre watershed as the measurement unit is okay, but we suggest a watershed-size based on a stream order as opposed to a specific acreage (which may not be available). We recommend both clumped and individual snags distributed across the landscape, and not just focused in the WLPZ. The goal should be to have between 3-4 snags / with no more than 3 of those in a class I or II WLPZ. That is, at least one snag / acre is outside to the WLPZ. Therefore, we believe the goal for JDSF of 1/acre is not sufficient.

Under "Large Woody Debris", the size distribution should reflect the site potential. The goals should include quality standards (e.g., at least ½ rated as hard), and based on full trees (a tree that falls and breaks into 5 pieces of trunk should count as one piece of LWD). Distribution should mimic that of snags (e.g., most in WLPZ, not all in WLPZ).

Pages 62-63. Under "Plant Species of Concern", please include a monitoring program for plant species of concern that may be subject to impacts. We are willing to work with JDSF in devising such a monitoring program.

The protection of rare, threatened, endangered, or endemic plants, and management for their perpetuation, should also include the protection and management of locally significant populations.

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We recommend the following guidelines: 1) JDSF's plant resources should be inventoried to produce a comprehensive plant list and identify populations of rare, threatened, endangered, and locally significant plants. This list should be regularly updated, and the plant resources should be managed to at least maintain their current diversity. 2) Special plant populations should be regularly monitored to ensure that recreation or other forest uses are not negatively impacting these populations.

Relationships and partnerships with local universities and other entities should be developed to encourage scientific research on rare flora.

An educational program should be developed and implemented to inform forest visitors about the negative effects of picking wildflowers and trampling (straying from paths) on vegetation, as well as the impacts of invasive/nonnative plants on native/sensitive plant populations.

Pages 63. Under Aquatic and Riparian Ecosystem Dependent Species of Concern, we not that the draft management plan states that JDSF will "…specifically reduce the risk of stream and riparian habitat degradation." Especially for Threatened and Endangered Species, we note that this approach is opposite what is appropriate. That is, the prime reason to plan operations in areas that may affect these species is to improve habitat conditions.

In the Aquatic "Habitat Protection" subsection, Class IIIs should be provided with a WLPZ, or at least a tree retention goal to act as erosion control features and sources for LWD.

The management plan would benefit through input from the North Coast Forest Reptile and Amphibian Working Group (FRAWG) for guidance on surveys and protective measures for herpetofauna. FRAWG is a group of interested parties with representatives from USFWS, U.S. Forest Service, Department of Fish and Game, National Marine Fisheries Service, private timber companies, and others. Please contact Mr. Gary Falxa of the USFWS at gary_falxa@fws.gov for information about FRAWG and how it can help assist in development of the management plan and EIR.

Additionally, the management plan should acknowledge that upland habitat is important for the northwestern pond turtle. Turtles may migrate several kilometers from waterways for winter hibernation. It is therefore important that upslope and down slope migration not be hindered by impassable fences, berms, or other structures.

Page 63-64. Under Aquatic "Habitat Management Practices" subsection, we welcome leaving the 10 largest trees / 330 feet of channel on Class I-II watercourses. As stated above, many Class IIIs also merit tree retention. In addition, for clarity, we interpret that to be the 10 largest trees on each side of the watercourse. Bare areas that have immediate connection with the active channel should be treated for erosion, regardless of size. We recognize that it is appropriate to protect drainage structures and that to do so might occasionally mean LWD modification. However, the identification of drainage structures

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that are causing the need to remove LWD or avoid recruiting it should feed back into the road management plan. Such structures should be high priority for renovation to a design that is not threatened by LWD loads. Road construction and harvesting in an inner gorge approval should also include a fishery biologists as well as a CEG. While the CEG can address variables relating to the probability of mass wasting, the biologist can provide input on the sensitivity of the in stream resources. Salvage of dead or dying trees in a WLPZ, even in the large-scale and emergency occasions mentioned, should be previewed and subject to conditioning by fishery biologists.

Page 64. Under "Northern Spotted Owl strategy, this is a listed species for which "take" is not permitted. Experimentation on any aspects of its biology or response to forest management can only proceed under an incidental take permit. The "habitat protection" section should include the Fish & Wildlife Service review along with the FPR's habitat and disturbance reference. Under "Species Protection," at present the established spotted owl survey protocols are endorsed only by the Fish & Wildlife Service. DFG has not taken any action endorsing them and thus the clause "…the responsible state or…" should be deleted for accuracy. Again, add "…and/or Fish & Wildlife Service technical assistance" at the end of the 2nd bullet under species protection. Please provide the basis for the parameters provided under NSO "Habitat Management Practices"; especially the criteria proposed within too and within 1000 feet of the activity center.

Page 65. Under "Osprey Conservation Strategy", will nest tress really be protected with a buffer zone to minimize disturbance "…to the maximum extent possible?" That might be a pretty large buffer. Perhaps better to state that the buffer zone will be sized to reduce disturbance impacts below a level of significance. For surveys, we recommend that none of two visits be separated by more than 1 month. The log-hauling buffer should apply to permanent haul roads if these are new haul roads as part of the plan, or if they are pre-existing haul roads that have not been used for several years.

Page 65. Under "Snag and cavity dependent species of concern", the draft management plan should identify which snag/cavity dependent species are expected to be benefited by maintaining or developing forest openings.

Page 66. Marbled Murrelet

JDSF is recognized as a critical habitat area for the survival and recovery of the State and federally listed marbled murrelet. Protection and enhancement of habitat within the forest is vital to assure conservation of the species. The Department has previously commented on this importance during the critical habitat designation process by the U.S. Fish and Wildlife Service (USFWS), in letters dated June 6, 1994 and October 10, 1995.

The USFWS recovery plan also recognizes the need to recruit habitat in this management zone 5, Mendocino, Sonoma, and Marin counties, to help assure murrelet recovery and minimize the gap between larger populations to the north and south. Recent surveys for murrelets both inland and at sea, and including the use of ornithological radar have further documented murrelet occurrence and persistence in Mendocino County on

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managed lands, and at Russian Gulch State park, adjacent to JDSF. This highlights the need to identify **additional** areas for recruitment and enhancement of murrelet habitat on JDSF, beyond the existing old growth groves and their buffers. Additional habitat closer to the ocean environment (western portion of JDSF) would be beneficial for the murrelet given the environmental gradient towards drier conditions on the east side of JDSF (less favorable micro climate at nest sites), and given the dependency of the murrelet on the ocean environment for foraging.

However, the placement and configuration of additional murrelet habitat areas should consider plans for continued and expanded recreational use by the public (pages 27 and 76 in the draft plan). Some recreation activities are not compatible with protecting nesting murrelets and assuring nest success. Recreational activities that may negatively affect nesting murrelets include: campfire smoke, elevated noise levels, and sudden, sharp noises associated with campgrounds, picnic areas, and trails.

Additionally, increased corvid (Family *Corvidae*: jays & ravens) levels are commonly associated with human use activities, and this increased number of murrelet predators has the likelihood to reduce murrelet nest success. In general, the development of recreational facilities in proximity to murrelet habitat should be avoided.

We recommend predator-proof garbage cans at human use areas and trailheads in the forest. By utilizing standard designs which exclude bears, corvid populations will be somewhat reduced. This is vital to help increase nesting success of murrelets and other sensitive bird species. We also support an active visitor education program to help reduce the occurrence of supplemental feeding of corvids (both intended and inadvertent). This should be conducted in cooperation with the Department of Parks and Recreation.

Such a program should include: interpretive displays, educational pamphlets, flyers, and "clean camp" patrols through the campgrounds, picnic areas, and elsewhere to reduce or eliminate corvid food sources.

An additional problem with having murrelet nesting areas in proximity to human use areas and roads/trails is the "hazard tree removal program" (pages 60 and 76 in the draft plan). This program for protection of forest visitors and associated facilities (and timber harvest activities) can directly modify or eliminate murrelet-nesting habitat through limb and tree modification. The draft plan does not adequately address the impacts or mitigation measures for the hazard tree removal program. The nesting platforms that are unique to murrelet nest trees cannot easily be recreated (the science does not exist as tested and proven), and the environmental cues/attributes which murrelets utilize to select nest sites are not entirely understood. Therefore, it is extremely difficult, if not impossible, to offset habitat losses associated with this program. This puts construction/maintenance of visitor use facilities including campgrounds, roads, and trails in direct conflict with murrelet conservation. We recommend full disclosure of any expansion or reopening of recreational facilities that may be envisioned under this plan. The impacts and mitigation measures must be adequately addressed.

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Equestrian use in JDSF (page 130 in the draft plan) should be subject to limitations imposed by state parks and U.S. Forest Service Wilderness areas to insure "weed free" hay supplies and thus help reduce the establishment of exotic plants. Proper maintenance of equestrian staging areas is also needed to assure dung beetles and weed seeds do not artificially supplement corvid diets.

Utilizing JDSF as a *research area* for creation of murrelet habitat should be considered. Silvicultural methods that might more rapidly create nesting platforms could be investigated. This would put a heavier emphasis on actual limb measurement and limb growth rates rather than tree dbh or basal area calculations for a stand. It would also likely require tree-climbing plots to measure the limbs and to look for murrelet nest sites as a baseline and monitoring tool. Topping of trees could also be investigated as a method of creation for murrelet nest sites. Tree climbing as a monitoring tool can then be employed after tree leader development begins to test at what point the new vegetative growth creates "sufficient" cover for creation of murrelet nest sites.

Due to the difficulty of detecting murrelets in "low use" areas such as Mendocino County, it will be difficult to confirm presence on JDSF through the conventional Pacific Seabird Group survey protocol. We recommend employing more intensive survey efforts in potential habitat (more weeks of survey effort/year, and more stations/stand), conducting eggshell fragment searches, and ornithological radar. A goal should be to confirm presence and occupancy of murrelets on JDSF. This will help guide the establishment of habitat protection areas/research areas, and contribute to revisions of the management plan (page 4). In particular, ornithological radar would help assess if old growth stands on the east side of JDSF are used to the same extent as legacy old growth trees in the forest matrix on the west side of JDSF. This would help in developing the best strategy for the protection/creation of murrelet habitat.

In summary, the draft plan does not provide a thorough analysis of the value to murrelets of the proposed old growth reserve/augmentation areas. Such an analysis is particularly difficult given the lack of occurrence information on the murrelet (see item 9 above). Also, the murrelet protection measures to be employed on JDSF are not framed in the context of the local distribution of murrelets in Recovery Zone 5 in California, or in the long-term context of population persistence. This should be remedied in the final management plan and the EIR. Finally, the discussion of recruitment of late-successional forest for the Mendocino Woodlands Special Treatment Area [2,224 acres], (pages 60-61), does not specifically describe or quantify the potential value to murrelets over time. Again, this should be discussed and quantified more fully in the final management plan and EIR.

Page 67. Under "Vaux's Swift and Purple Martin", invert the burden of protection for bullet 1. That is, trees with suitable cavities for these species will be retained unless a workable alternative for the impacting land use (infrastructure) is not available. Especially in areas where large snag densities are deficient or where nesting by either of these species is concerned, the snags should be retained and the region of concern for fire

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control or worker safety be managed to eliminate the threat – i.e., flag area and keep woods workers away. Under swift and martin "habitat Management practices" (page 68), the statement regarding "the range of conifer species ...will be recruited ... by retaining large fir trees" is inconsistent. A range of species is desirable, as are large snags. The bullet point is directed at snag recruitment in even-aged or group selection harvest, how will snags be recruited in single tree selection? Why does this last bullet indicate snags will only occur in areas that are considered important to purple martin – the section is about both martin and swifts. Other species need snags in areas that might not be identical to those areas used by purple martin.

Page 68. Please reference the definition of potential habitat for red tree voles. A research effort to examine red tree vole ecology in the Mendocino county redwood region is a very desirable and worthy project. However, we do not believe that an ambiguous research effort is a "Species Protection." We recommend that, at a minimum, for species protection, that a) in single tree selection harvests, trees with red tree vole nests be retained and adjacent trees be fallen away, b) in even-aged and within the groups of group selection, trees with red tree vole nests be retained as well as any adjacent tree whose branches inter lock, and c) develop a monitoring proposal with DFG to evaluate these measure's effectiveness.

Under the introductory section of "Plant and Animal Species of Concern Possible Present on JDSF" we encourage JDSF to proactively and aggressively manage JDSF to be inhabited by these species. That includes taking measures to encourage colonization, including working with DFG to establish species of management concern.

Page 69, Under "Guidelines for Species Surveys and Avoidance of Significant Impacts", we want to underscore the need to evaluate the potential of significant impacts to all sensitive species regardless if the are "listed (rare, threatened, or endangered)." The phrase in the draft management plan might be interpreted to mean only those that have gone through the federal or state Endangered Species Act listing process. The term "listed" should not be construed that narrowly as CEQA specifically notes that species need not be listed under those acts to be considered "rare, threatened, or endangered." Scoping should also identify those species that are sensitive, but perhaps not yet reduced to a level of being "rare, threatened, or endangered." Application of mitigation measures to maintain the local population and its habitat value should still be applied to avoid contributing to a trend whereby listing might be appropriate. We specifically request that JDSF notify us both in a THP and through the California Natural Diversity Data Base when any species of management concern are detected on a proposed THP specifically or in the general vicinity of JDSF.

General Comments Regarding Bald Eagles and Their Habitat

We recommend the management plan include a program to conduct annual nest-site surveys of known or suspected bald eagle nests under the State survey guidelines. Further, we recommend development of a territory management plan for protection and management upon discovery of any bald eagle territory.

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General Comments Regarding Peregrine Falcons and Their Habitat

We recommend the management plan contain specific provisions to better assess peregrine use of JDSF through surveys. A concerted effort to document sightings of peregrines on JDSF through contacts with local birders and biologists would be a good first step. New evidence indicates peregrines will utilize large redwood trees for nest sites.

Comments on Species of Special Concern (SSC)

This designation is intended to result in special consideration for these animals by the Department, land managers, consulting biologists, and others. It is intended to focus attention on the species to help avert the need for costly listing under Federal and State endangered species laws, and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them.

We recommend that the plan include specific protection, assessment, and monitoring goals for SSC. A goal of the management plan should be to at least confirm the presence of all species of special concern. Confirming presence will help assess silvicultural practices and contribute to subsequent revisions to the management plan.

Pacific Fisher and Humboldt Marten

Since both of these forest carnivores have been virtually extirpated from the redwood zone, the plan should be strongly supportive of reintroduction efforts which may occur in the future through the Department, USFWS, and the Redwood Sciences laboratory. Restoration and protection of key habitat elements on JDSF may assist in natural recolonization such that reintroduction may not be necessary. Fisher and marten are fairly well documented in historic trapping accounts from coastal forests in southern Humboldt county, and from the Yolla Bolly mountains/Mendocino National forest/Snow Mountain to the east of JDSF. Occurrence of fisher has also been documented on private timberlands (Pacific Lumber Company and Simpson Timber Company) in the redwood habitat type. Protection of large diameter live trees (redwood, Douglas fir, tan oak, oaks), large snags, and large diameter "coarse woody debris" (dead and down trees) will benefit both fisher and marten and many other species as well. The forest carnivores require a broad geographic distribution of special habitat elements due to their large home range sizes and broad spectrum of prey. How well the preferred management option at JDSF would meet the habitat requirements for fisher and marten should be discussed.

Bird Species of Special Concern and General Comments

It appears highly probable that the Olive-sided flycatcher and the Swainson's thrush will be added to the revised Bird Species of Special Concern document that the Department is

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in the process of preparing (personal communication, Lyann Comrack, Department of Fish and Game).

The retention of large diameter trees, including snags and dead-top live trees, and "goose pen" and hollowed-out trees will help protect the special habitat elements needed by a wide variety of species including Vaux's swift, purple martin, olive-sided flycatcher, many bat species, fisher, and marten. It is important that management activities on JDSF avoid and minimize impacts to these critical habitat elements, and allow for recruitment of replacement trees once the legacy trees and snags fall from natural causes.

Protection of old-growth trees and snags near watercourses may benefit a variety of species that forage over water (or use streams as flight corridors, e.g., marbled murrelets) but require nesting habitat nearby. Therefore, in designing forest management options while trying to accommodate sensitive wildlife species, special protection needs to be afforded to the interface of old growth and riparian habitats.

In general, for protection of riparian associated songbirds we recommend: "Avoid impacts and disturbance in the riparian zone during the breeding season; riparian understory should be retained as a dense and structured vegetation layer."
For additional information on habitat needs of riparian bird species we recommend the following web site be consulted: California Partners in Flight and the Riparian Habitat Joint Venture, The Riparian Bird Conservation Plan - Version 1.0 (August 2000) available for download at http://www.prbo.org/CPIF/Consplan.html.

Page 70. The introductory paragraph of "Riparian Management" asserts, "...protection measures assigned to riparian areas are to remain sufficiently flexible for conduction research on the adequacy of differing riparian protection measures." While we agree that there is need for such research, the listing of species that might be affected by such research makes avoidance of impacts a top priority and severely narrows the scope of activities that are researchable. A proposal to undertake research that might 'take' a listed species necessitates an incidental take permit from the agency(s) with jurisdiction. The stated range of WLPZ widths is confusing. We recommend stating the minimums and what conditions would require additional protection.

In the same section, we note that the numbered items may or may not be appropriate to avoid impacts. As suggested earlier, the starting point for operations in WLPZs should be designed to benefit listed species, or at worst is neutral. For clarity, bullet 5 should indicate the retention is to be on each side of the watercourse. Bullet 9 proposes ELZ's for Class IIIs. As stated above, we believe that in many cases, these watercourses merit measures for LWD recruitment to the stream in order to meter sediment passing downstream and on the adjacent slopes to reduce surface erosion from entering the channel. We encourage JDSF to adopt an explicit protocol for determining when a WLPZ or some other tree retention standard will be applied to Class III watercourses.

Page 70-71. Under "Hillslope Management to Provide Slope Stability", the goal is to limit management related input of sediment to a level below that which would adversely

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affect aquatic habitat and water quality. The draft management plan stipulates that a CEG will be consulted for appropriate measures needed to avoid or minimize impacts for operations in inner gorges and unstable slopes. As we stated above, we believe this is appropriate, but that it may not be sufficient, especially where the CEG cannot devise avoidance measures. In these situations, a fishery biologist needs to be a part of the team evaluating the risks and proposing alternatives.

Page 72. Regarding the Road Management Plan, we agree with the observation that forest roads are a major source of management-related stream sediment. Further, roads are problematic for many aquatic and terrestrial resources, although the plan focuses only on the aquatic/sediment connection. We appreciate JDSF's thoroughness in the road management plan but would like to see some additional measures.

Page 73. Under Road Management Plan Inventory, we trust that DFG will be included as "other experts" and invited to help develop site-specific mitigation measures for identified significant potential or existing problems.

Under RMP "Design and construction" we understand that developing a specific target road density is problematic. However, as stated above, we believe that roads are one of the primary impacting features on the landscape. Therefore, we believe that absent a specific target, that JDSF adopt a goal of "declining road density" and new roads are offset by decommissioned roads. To enable this without delaying closing roads, a 10-year moving average could be adopted to allow new roads to be constructed as needed before closing old roads is undertaken. The draft management plan states that unstable areas will be avoided "whenever possible." We encourage that helicopter yarding should be a very strongly considered alternative, especially when dealing with unstable areas. More use of helicopters will reduce the need for new roads and will help achieve a declining road density.

Under RMP "Use Restrictions", the draft management plan and RMP needs to include closures for other purposes such as sensitive resources such as preventing access to important coho spawning areas, nesting areas for murrelets should they be documented nesting on JDSF. The RMP and draft management plan should also describe closure enforcement – frequency of gate effectiveness inspections, who and how violations are prevented and cited, etc.

The RMP should identify spoil areas that will be used to discard slumps encountered during maintenance activities. A priori identification of spoil areas can prevent the use of potential rare species sites without adequate review simply because of an oversight or an emergency.

Page 75. Under "Operational Implications of Watershed Analysis – Roads", we agree with #2 and ask that the draft management plan state in what conditions outsloping is **not** "possible and appropriate." Under #3, WLPZ roads that are used should be surfaced. Under # 8, add that crossings will be subject to DFG 1600 clearance as well as the JDSF Road Management Plan.

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Under "Operational Implications of Watershed Analysis – Riparian zones", add to #10 a goal of managing for high levels of LWD to not only fish bearing waters but also to class II's and class IIIs. Under #12, DFG would like to have any bare soil surfaces resulting from management actions, regardless of area, in direct contact with the active channel seeded and mulched.

Under "Operational Implications of Watershed Analysis – Watercourses" should identify the 1600 permit requirements for drafting (#18).

Page 76-77. Under Recreation, Aesthetics, and Public Use, we offer the following suggestions. First, the draft management plan should recognize that new facilities or new uses may have impacts upon fish and wildlife resources, and thus should be cleared through CEQA. Second, generally speaking, the least amount of disturbance to an array of resources can be achieved by concentrating uses into a limited area. Conversely, avoid placing new facilities in previously remote areas. Finally, new facilities should not be developed if they cannot be maintained and environmental protection rules enforced. For instance, pets should be under the owner's immediate control at all times.

Page 80-82. The draft management plan notes several features to be developed as "Forest Protection". This plan lacks a section devoted to fire management and ecology. Forest protection does not equate with fire suppression. We believe that Biswell resolved this issue in the 1970s. This whole section seems to ignore the fundamentals of the California Fire Plan. Implementing the Fire Plan on JDSF could be an outstanding demonstration project.

Page 80. Under "Pre-suppression", this is supposed to mean something more now that the Fire Plan has been updated and now that CDF (elsewhere) places so much emphasis on the process of determining assets of risk once appropriate prescriptions to address these. We recommend that JDSF use the Fire Plan database to identify and map all assets at risk. The plan should 1) identify natural resources at risk, 2) potential suppression options and 3) appropriate pre-suppression activities. A biologist should be solicited to provide important to these ends, and a CEQA clearance published.

Under "Fire History", data should be overlaid with a fuel model and vegetation condition data. This moves us towards current and desired future conditions.

Page 80-81. Under "Fire Defense Improvements", we recommend analytical investigation on potential wildlife effects with shaded fuel breaks. A system of shaded fuel breaks should have sideboards on the ecology of the forest species possibly affected.

Page 81. Under third paragraph, in addition to archaeological sites, we recommend a program to locate natural communities and plant and animal species requiring special protection. We also recommend a program to identify the fire ecology need of JDSF.

Under "Education", JDSF could create a fire ecology brochure and kiosk.

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Under "Suppression", suppression tactics are based upon the pre-suppression plan. Hence, the ecological needs should be addressed with this plan, or, in a unique sub-plan that is attached.

Page 82. Under "Post-suppression", there should be a post-rehabilitation plan section that details appropriate prescriptions for foreseeable fires. Minimally, such a section should specifically address: 1) how to determine need to seed, and 2) how to choose a seed mix, 3) how to determine where to salvage log, 4) how to conduct salvage operations, 5) protection of riparian communities, and 6) how to minimize erosion from mechanical activities. A monitoring plan should be developed that evaluates the effectiveness of the rehabilitation.

Under "Prescribed fire", fire exclusion is not desirable. We agree that JDSF should be used for site-specific research. We think that JDSF cannot pursue healthy forest conditions if CDF does not provide the resources to implement these objectives. We recommend developing a prescribed fire management plan. Department of Parks and Recreation could serve as a model for this purpose.

Chapter 4. Research and Demonstration. This section could be integrated into the previous two sections for an overall tighter management plan.

Page 87. The third paragraph restates an earlier assertion – that the forest needs flexibility to test the effects of regulatory standards. The listing of endangered species limits the flexibility in the protection measures to those that are likely to avoid take. Proposals to test other less stringent standards need to be accompanied by incidental take permits from the agency(s) with jurisdiction over the resources potentially affected.

Page 91. Under the "Advisory Committee" (Is this the same "advisory committee" described on page 96?) the draft management plan should provide a table specifically identifying the affiliations of the committee. For instance -- is this committee limited in number, are there requisite agencies represented, are there other stake holders such as environmental and timber interests? Are wildlife and fishery agencies (DFG, FWS, NMFS) invited to sit on the committee? We find the sentence that starts with "The State Forest Advisory Committee…" confusing (both on page 91 and 96) and needs rewording or split into 2 sentences.

Page 91-92. Relative to the "Competitive Research Grants", how does one access "the fund reserve … for miscellaneous projects…outside the RFP process?"

Page 94. DFG is interested in joint research and monitoring efforts as described under "Cooperatives". We believe that by participating closely in assessing the impacts of forest practices on our trust resources can raise our level of confidence in the results.

Page 95-96. Under "Demonstration" we agree with the areas of study identified as important to wildlife and wildlife habitat are among some of the more important areas for

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fish and wildlife research, but reiterate our above warnings about the problems with assessing these issues. Further, we believe that on a public "demonstration" forest, that every harvest should be either a "demonstration" in itself, or be a part of a more "programmatic" demonstration. A timber harvest absent a role in a demonstration should be delayed until the harvests' value for demonstration purposes is adopted and described in the THP.

Chapter 5. Monitoring and adaptive Management

Page 99. "The JDSF approach" describes several different sorts of monitoring. Much of what follows includes primarily the first three sorts of monitoring, while effectiveness monitoring and validation monitoring (because of inherent difficulties) gets less attention.

Page 100. Under Timber Resources, we would elevate goal 1 to a high priority, in agreement with the draft management plan's earlier assessment of the primary wildlife challenge of the plan. We recognize that the goal may not be achievable over the short term because by definition and process, it takes time. Still, it should be a high priority. The goal should explicitly state the presence of decadence (declining dominant trees, snags and LWD) as well as CWHR 5 and greater as the parameter.

The IFI parameters are described. It appears that snags are not enumerated, and should be by at least both species and hardness factors. Another category for trees that could be added to better portray the decadence dynamics is a vigor factor. Course woody debris should be measured by species and condition as well.

Page 102. "Adaptive Management Goal" #1 should be expanded to include cultivating wildlife structures availability and recruitment in all stands. Goal #3 should be to manage hardwoods at desired levels, not to selective remove where overabundant. "Overabundant" is a subjective term, and from some perspectives, they may not be over abundant anywhere.

Page 102-103. Under "Watershed Resources", stressing storms needs to be a trigger for monitoring and adaptive management.

Page 103. Under the Stream Channel Condition goal the first bullet should include in addition to that noted, information of the species of LWD and its source (stream side, earth flow, fluvial, or unknown).

Page 104. Under the goal "minimize potential cumulative watershed effects ... " the draft management plan describes the research project in the Caspar Creek watershed. While we find the research that has been performed in Caspar Creek to be world-class and highly rigorous, still amounts to a case study with one replicate. Extrapolating these findings to areas with different geology, topography, and forest types even in the Redwood region should be done with care. Developing replicates of this research project would be a valuable undertaking.

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Page 105-106. Under "Wildlife Resources", we believe that development of a rigorous inventory of wildlife resources on JDSF would be a prudent exercise under the auspices of developing a baseline. Such an inventory would be four-fold: 1) general area species presence for the wildlife community; 2) general area focused surveys for high-profile species (i.e., those identified in the draft management plan); 3) species-specific cooperative studies with adjacent landowners and agencies, and 4) THP specific surveys. This information could jell into a solid basis for assessing species distributions, habitat needs and response to habitat alteration, and species trends.

Appendix III. Special Concern Areas

Page 146. Under Pygmy forests, note that the plan says they will not be harvested. However, the plan should promote management to ensure the vegetation is type is sustainable. Preventing destructive land uses (e.g., ORV use) should be goal and research into promoting natural regenerative processes (e.g., prescribed burns) is encouraged.

Under the "nest sites" for owls and osprey, the acreages should be minima since new findings will mandate more buffers, especially absent incidental take permit(s). Likewise, the draft management plan should acknowledge that other species discoveries might affect the amount of acreage designated "critical areas" (e.g., murrelets, goshawks).

Appendix IV. Research and Demonstration Program

Page 148: We applaud the draft management plan for stating that the intent is to "Make the State Forest available to educational institutions and other agencies for research demonstration, and training."

Appendix VI. Road Management Plan

Page 178. Relative to footnote 9, in what ways do road use agreements constrain JDSF's management options, especially if the proposed management were to alleviate road-related environmental problems? Do the agreements have clauses that will allow subsequent renegotiation?

Page 180-181. Field data sheets for roads were not included in the draft management plan. However, some of the parameters were. Other features that should be noted because they have some potential for highlighting potential threats to resources or management solutions include type of road surfacing and the presence of berms on the road. Through cuts on old railroads should be identified as a possible location where spoils can be deposited safely with little risk of entry into a watercourse. Signage needs should also be identified – periods of closure, and warnings of distant closures, and reasons for closures can help generate some public support of closures. A brochure describing the road closure program should be available to forest users.

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Page 179-180. Under 1. 1 "Road Inventory and Methodology", the inventory should include identification of potential spoil sites, their assessment, and adoption.

Page 181. Under 1.3, the ability to improve or correct diversion potential should also be identified.

Page 183-184. Under 2.1 Planning, again, the draft management plan notes that a road density target (threshold) will not be used because the mitigation measures included in the RMP will help reduce significant adverse effects to aquatic habitats. These measures are enumerated at the top of page 184 – to which we would add the deployment of a "storm patrol" during low frequency (high intensity) storms. While we recognize that setting a threshold is difficult, setting a goal is not. Aquatic habitats are not the only resources negatively affected by roads. As said before, the goal should be a reduced road density over time. In the Planning stage, avoidance of new roads should be a very high priority. We support helicopter access as one means to avoid new roads.

Page 184-185. Under Section 2.2 "Design of roads, landings, and crossings": 2nd bullet should describe "except where unavoidable;" 3rd bullet should describe the triggers to "except in very rare cases;" the 5th bullet should state that the maximum storm size resulting form the various techniques will be used to size the culvert; and 7th bullet should note that smaller culverts with substantial fill should have armored fill and outflows.

Page 185-186. Under 2.3 Construction and Reconstruction, note that disturbance to the bed and banks will require a 1600 streambed alteration agreement.

Page 186-187. Under 3 "Road Use restriction": 1st bullet should cite the reference to the data that has "proven" the practice effective in reducing sediment; 2nd bullet should add the a clause "no water is flowing from the road surface;" 6th bullet should prevent blading with a Class III ELZ or within a certain distance of any watercourse, or where the road is in-sloped an inside ditched that flows to any classifiable watercourse; 7th bullet should specify closures for any environmental protection reasons, not just road surfaces (i.e., invert the two sentences); also we believe that all spur roads (roads that are nor through roads and do not access a specific public destination) and non-use roads should be gated and closed to vehicular traffic; 9th bullet prioritizes off-channel sources for water drafting, a priority we support and are willing to work with JDSF to develop; 10th bullet should specify that screening should protect other aquatic life forms as well as fish -- and for clarity – is water used for dust abatement for non-THP uses (the bullet seems to imply that drafting is only used for THPs)?

Under 4.1 "Principles of the Inspection Program" for abandoned roads, include the effectiveness of the barrier/blockades as one of the potential problems to be evaluated during the inspections and repaired as necessary.

Page 189. Noted under item 6, but present elsewhere is a statement that the "…inventory will be finished within five years." Within five years of when – approval of the

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management plan? Other references to timeframes should be made clear as to starting times.

The RMP is missing two sections that JDSF should have: 1) a monitoring program including inviting agencies to participate either jointly or independently in assessing the implementation and effectiveness of the plan, and 2) demonstration of the techniques and standards for other landowners and resource professionals.

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The author is the University of California Forest Advisor for Mendocino and Lake Counties.

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July 27, 2001

Dear Director Tuttle,

I hope this letter finds you well. Thank you for the opportunity to submit comments on the current draft of the Jackson Demonstration State Forest management plan. I would like to commend you and your department in undertaking this important task. My comments are provided in the hopes that they will be useful in the further development of the draft plan. I have limited my comments to those sections that I feel qualified.

Pg. 9. Forest Management. The plan currently acknowledges that harvest has averaged approximately 1.5 POI over any rolling five-year period. This recognition and statement is very powerful and cannot be understated. As you know, Mendocino County advanced a set of county rules to the Board of Forestry in 1994 with the rule package premised on a limitation of harvest based on POI. The Board of Supervisors has never rescinded their decision to forward the rule package, therefore establishing a defacto county policy on the matter. Maintaining current levels of harvest into the future based on POI should be considered a strong suit of this plan.

Pg. 10. Forest Structure. The acknowledgement of the average forest inventory approximating 43 mmbf/acre again is a very powerful statement. JDSF continues to demonstrate the resilience of the redwood type and how the role of conservation can be used to discuss restoring biological integrity of depleted forests.

Pg. 13. Wildlife, Fish and Plants. The plan acknowledges the presence of old-growth stands and trees across the forest. In light of the current depletion of old growth redwood acreage across its range, it is important for JDSF to represent an important link to the past by providing an example of the north coast's lost natural heritage. The plan acknowledges the tenuous nature of defining old growth but a definition should be adopted. I suggest that CDF review the definition presented by Noss[1] and consider adopting a definition that has been cited in the literature. This would make a stronger document.

Pg. 16. Snag Retention, Recruitment. The plan suggests that snags of less than 11 inches are of limited value based on work of Thomas et. al. 1979 in Eastern Oregon. Though an important point that should be retained in the plan, I suggest amending the wording so that the plan is based on geographically appropriate literature[9,10,11]. Furthermore, a recognition that snags < 11" dbh have ecological value would strengthen and add significant credibility to the document.

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Pg. 16. Biological Diversity. Certainly this is an important concept in the redwood region and needs to be included in the plan. Recent literature[2] suggests that management considerations be expanded beyond simple discussions focusing on species richness. In the paper I have cited the authors discuss the need to recognize management implications on *biological integrity* not simply numbers. In light of the current discussion focusing on CWEs, endangered species and their habitats, and the role of natural disturbance patterns, I suggest a section explaining how management scenarios will be developed to maintain forest integrity by addressing those forest components most sensitive to disturbance i.e. water quality, late-seral habitats. Any data that could be included to support the assumptions would greatly enhance the credibility of the plan.

Pg. 29. Wildlife Habitat. Many highly qualified people with expertise in conservation biology, ecology and the like have expressed concerns for the depletion of redwood forest wildlife. It is critical for all elements of this plan to provide objective reasoning and justification for the planning approach. For example, the second sentence states, "To many people, timber management is synonymous with habitat damage". In some situations, this statement is correct. Norris[3] reports how as many as nine species of bryophytes have been eliminated from old-growth forests following harvest. Hoekstra et al.[4] have demonstrated how soil arthropod abundance is negatively impacted by short-rotation, selective harvests. Bury[4], Welsh[5] and Bury and Martin[6] have all demonstrated how herpetofauna populations and biomass are impacted following timber harvest. In strict ecological terms, when a species is negatively impacted by a land-use practice, one could arguably consider the action to be synonymous with habitat damage. It is important to avoid statements that may be construed as advocacy positions for timber harvesting without adequately addressing other resource values.

Pg. 30. Even-Aged Management. The plan recognizes the desire for "some individuals" to have a cessation of even-aged management on JDSF. However, the plan fails to recognize that these individuals included the Citizen Advisory Committee formed by CDF to provide guidance and input to the planning process. Some CAC members will certainly view the omission of identifying the group who provided this input as inflammatory. I suggest acknowledging the source of this position.

Pg. 41. Habitat Fragmentation and Connectivity. The description of needs and priorities in this section is laudable. However, a description of CWHR habitat types and seral stages across the forest would help in the assessment of recognizing fragmentation and connectivity priorities. Simply adding this component with the other maps at the end of the plan would greatly strengthen the document. Furthermore, this type of information could then be used to validate some of the assumptions provided in other sections of the plan.

Pg. 52-53. Even-Aged Management. The argument for even-aged management is advanced by the erroneous assumption that "...stand structure is often produced naturally be severe fires or windstorms where all but a few of the hardiest individuals survive". To my knowledge, scientific evidence does not support the position for the redwood type

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found along the northern coastal range for this species. Noss[1] provides a thorough discussion based on the existing literature dealing with natural disturbance patterns in coastal redwoods. Though, fire occurred regularly (as often as a seven year cycle in the southern portion of its range) catastrophic, stand replacement fires, prior to the commencement of logging are considered rare events.

The plan advances in part the justification of even-aged management based on wildlife needs. Short-duration, even-aged silviculture tends to favor early and mid-seral stage organisms who can readily exploit the structural and composition components of the stands. There is little scientific literature arguing in favor of meeting the habitat suitability for these species (at least in the redwood type). The only legitimate argument should be based purely on silviculture and the need to regenerate stands in order to produce wood products. [That said, I am apprehensive about using even-aged management on fully stocked stands because of its lack of replication to natural disturbance and its potential ecological ramifications.]

Additionally, the concept that even-aged silviculture could provide structural elements spatially allocated to provide suitable characteristics is based on the flawed premise that desirable elements can be developed in the 60-120 year harvest cycles. The plan is attempting to justify a particular land-use practice for wildlife benefits that is not well supported in the literature. For example, Gellman and Zielinski[6] and Rainey et al.[7] have shown how bats selectively seek out large basal cavities (often called goose pens) for roosting sites. These characteristics (most particularly those associated with older forests) cannot be attained within the context of even-aged management described in the plan.

I certainly recognize the need to evaluate the relationship between silvicultural treatments and wildlife response in the redwood type. I would suggest that in order to address some of the criticism that will surely be raised because of this section, the Department consider developing a Technical Advisory Committee for JDSF that can develop criteria to evaluate any even-aged projects prior to their implementation. This idea is based on my knowledge of how the University's Research and Extension Centers use a similar approach to recruit, evaluate, and monitor projects. This type of an approach would increase the credibility of the plan and the projects being proposed and conceivably be used to evaluate all harvest proposals. In addition to the development of comprehensive plans, this approach could also provide strong demonstration examples with validated results.

Pg. 58. Exotic Species. The plan provides the reader a limited understanding of the extent of the problem. Though clearly the plan considers exotic vegetation a problem, it fails to delineate its scope thereby leaving the reader with more questions than answers. Additionally, the plan appears to be contradictory in some areas. For example, the plan states that, "Integrated Weed Management (IWM) emphasizes control of the environmental conditions that cause or promote weed infestations", furthermore the plan states as part of the overall IWM strategy is to, "Prevent dispersal of exotic weeds into new areas". In light of the previous section dealing with even-aged management, how

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are the obvious contradictions in these two sections to be resolved? Specifically, how will increase light levels and soil disturbance produced from even-age silviculture provide a consistent message with the principles of IWM? The plan seems to provide incongruent logic when the two sections are compared.

As you are aware, the use of herbicides on JDSF was a primary source of local discontent that led to the formation of the Citizens Advisory Committee (CAC). The sections in the plan that currently address herbicide use and exotic weed management fail to recognize the volatility of this issue. The plan should specifically delineate how extensive the exotic weed problem is, alternative methods that could be used to management competing vegetation in even-age stands and how alternative silvicultural practices could be employed to minimize the need for chemical controls.

Pg. 64-68. Habitat Management Practices. Understandably, the plan limits its acknowledgement of selected wildlife species. However, the plan makes assumptions regarding harvest impacts on these species without providing the benefits of validated data. The plan would be significantly stronger if WHR assessments were provided for the identified species. It would provide both the reader and CDF an assessment of the risk each species may be subjected to under the proposed management scenario.

Pg. 69-70. Watersheds. Again, there seems to be some contradictory language in the section dealing with Riparian Management. The plan calls for a goal of establishing late-seral forest conditions but then proceeds to suggest a level of harvest within the WLPZ that will leave the "ten largest conifers per 330 feet of stream channel". Though commendable, this practice appears arbitrary and seems to limit the understanding of riparian zone functionality to only LWD recruitment. It is not clear in the plan if the zones will be harvested on a 20 year cycle, and if every 20 years only the largest trees at the time will be left, or if once a desired condition is met, the zones will then be exempt from future extraction. Ideally, the plan offers an opportunity to demonstrate alternative, performance-based practices that could serve as future demonstrations for innovative approaches to WLPZ management. Those alternatives are too numerous to list here. Suffice to say; that a performance-based strategy could incorporate a multi-faceted strategy that could be used to demonstrate alternative management approaches over time.

I hope these comments are useful. I am willing to discuss any of my ideas with you or any member of your staff.

Sincerely,

Gregory A. Giusti
Forest Advisor

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(d) A Notice of Preparation shall include the following information:

(1) The name of the plan submitter.

(2) The location of the plan area by county, section, township, and range, and the approximate direction and distance to the plan area from the nearest community or well-known landmark.

(3) The name of the nearest perennial blue line stream flowing through or downstream from the plan area.

(4) The acreage of the area to be included in the plan.

(5) The silvicultural method(s) proposed.

(6) The estimated earliest date that the Director may approve the plan as he/she has indicated in the NTMP instructions.

(7) A statement that the public may review the plan at the specified Regional Office of the Department and a reasonable per page copy fee set by the Director for additional copies.

(e) The person submitting the plan shall furnish to the Department at the time of submission of the plan, a list of all persons, including their mailing addresses, who hold legal or equitable title to property within 300 ft. of the plan boundary. Either a list compiled from the latest equalized assessment roll or a list provided by a title insurance company doing business in California shall be deemed sufficient for compliance with the subsection.

(f) The Department shall mail copies of the Notice of Preparation within two working days of receipt of the plan to all persons identified in (e) above.

(g) Prior to plan submission, the person submitting the plan shall post a copy of the Notice of Preparation at a conspicuous location that is easily visible to the public and near the plan site. Notwithstanding other Board rules, the notices required by Section 1032.10 of article 6.5 shall be completed prior to submission of the NTMP, and within counties with special rules, (14CCR, Subchapter 4, Art. 13, Subchapter 6, Art. 13) the noticing requirements will be the same as for a THP.

1090.3 Notice of Preparation-Distribution by Director

The Director shall distribute copies of each Notice of Preparation within two working days of receipt to:

(a) The Office of the County Clerk of the county in which operations are proposed for posting at the customary place for posting environmental affairs.

(b) The local Ranger Unit headquarters for posting.

(c) At such other locations as the Director may deem desirable and feasible to provide adequate public notice.

(d) Any additional distribution of the notice required by the rules of the Board for individual counties.

1090.4 Request for Notification of NTMP or Notice of Timber Operations Submission

(a) Each Regional Office of the Department shall maintain a list of NTMPs or Notice of Timber Operations submitted each day.

(b) When any person requests notice of submissions of timber management plans, the Director shall provide the person, free of charge, with a copy of the list of NTMPs or Notices of Timber Operations submitted on the date or dates requested. If no specific date is requested, a copy of the list for the preceding week shall be provided.

1090.5 Contents of NTMP

The plan shall serve three functions: 1) to provide information the Director needs to determine whether the proposed NTMP conforms to the rules of the Board; 2) to provide information and direction for timber management so it complies with the rules of the Board and the management objectives of the landowner; and 3) to disclose the potential effects of timber management to the public. For the plan to serve these functions, it shall, as a minimum, contain the following information:

(a) Name, address, and telephone number of the timberland owner(s) or designated agent.

(b) Name, address, and telephone number of the timber owner(s) (if different).

(c) Name, address, telephone number, and registration number of RPF who prepared the plan.

(d) A description of the plan area within which timber operations are to be conducted, including section, township, range, county, and approximate acreage. Parcel numbers are optional additional information that may be provided.

(e) The forest district and subdistrict (if any) in which the NTMP is located.

(f) A description of present and proposed plan area uses other than timber production.

(g) A description by management unit(s) of the timber stand characteristics including species composition, age classes, projected growth, present stocking level, present volume per acre, size class distribution, stand management history, and potential pest or protection problems. The description shall provide the basis for the information provided.

(h) A description by management unit(s) of the proposed management objectives, including a discussion of projected timber volumes and sizes available for timber harvesting.

(i) A description by management unit(s) of proposed activities to achieve the management objectives. This must include: 1) projected frequencies of harvest, 2) silvicultural prescriptions for harvesting, 3) type of yarding systems to be used for each area; 4) anticipated interim management activities which may result in rule compliance questions (i.e. erosion control maintenance).

(j) The period of time over which growth will be balanced with harvest.

(k) A description of any cultural or historical resources known to exist with a description of possible impacts and protection methods to be used during timber operations.

(NOTE: there is no Section (l).)

(m) Whether a timberland conversion certificate is in effect, its date of expiration, and its identification number.

(n) Whether a timber harvesting plan is on file with the Department for any part of the plan area and if a Report of Satisfactory Stocking has been issued by the Department (show plan number).

(o) Information on the presence and protection of any known key habitat or individuals of any threatened or endangered plant or animal species that are listed in DFG inventories prepared pursuant to the F&GC or any species of special concern as designated by the Board in these rules.

(p) A description of potential impacts and protections for the quality and beneficial uses of waters within watercourses, lakes, and wet areas.

(q) A description of soils, surface erosion hazard, mass wasting erosion hazard, and erosion control measures.

(r) A description of the existing and proposed road system to be used in implementation of the management plan.

(s) A description of how the site preparation standards and stocking standards will be met.

(t) A description of the proposed yarding methods including protection of residual trees, watercourse crossings, operation on unstable areas.

(u) A description of slash treatment for site preparation, fire protection and pest protection consideration.

(v) A description of the cumulative effects analysis with supporting information, including impact of projected harvesting over the life of the plan.

(w) A copy of the forest practice regulations in effect at the time of submission.

(x) On a USGS quadrangle or equivalent topographical map of a scale not less than 2" to the mile, the following information shall be clearly provided. Additional maps may be required to show specific details, and may be planimetric. Color coding shall not be used. A legend shall be included indicating the meaning of the symbols used. See the district rules for the appropriate minimum mapping acreages.

(1) Boundaries of management plan(s) and management unit(s).

(2) Boundaries of regeneration methods, intermediate treatments, special harvesting methods, and alternative prescriptions that are to be applied.

(3) Boundaries of yarding (logging) systems, if more than one system is to be used.

(4) Location of public roads within the plan area, and private roads appurtenant to the timber operations where such roads are under the ownership or control of the timberland owner and are contiguous with the plan area, and classification of all proposed and existing logging roads as permanent, seasonal, or temporary roads.

Letter KB-255

Response to Comment 255.1
This comment is regarding land ownership distribution in the redwood region expresses a personal opinion. It is beyond the scope of the DEIR to analyze implications of a potential "regional imbalance of private and public lands." Please refer to General Responses 1 and 2.

Response to Comment 255.2
Page 216 of the DEIR states that the availability of late seral/old growth forest habitat is of concern due to the substantial reduction of this habitat type in the Pacific Northwest. Specifically for Mendocino County, the DEIR recognizes that JDSF has the most abundant well-stocked young growth stands.

Response to Comment 255.3
Please refer to General Response 9 for a discussion of the cumulative impact analysis included in the DEIR.

Response to Comment 255.4A
The DEIR does contain a section which discusses water quality concerns and effects from past projects in the Hydrology and Water Quality portion of Section VII, including 303d status waters beginning on page 365.

Response to Comment 255.5
Please refer to Response KB-255.1.

In regards to the use and interpretation of LANDSAT images (Appendix 15) as mentioned in the comments, some of the harvest units in the area cited are neither clearcuts nor heavy canopy removals. While the LANDSAT images are useful for generally identifying areas of harvest activity, it is not possible to visually interpret the colors of a LANDSAT image to distinguish degrees of canopy removal. Distinguishing different types of harvest activity requires going well beyond the level of image classification that has been done by the commenter.

The state forest is managed to demonstrate a wide variety of stand management and timber harvesting techniques. It is expected that private landowners throughout the region also utilize some methods of harvest. While some people find even-aged management to be objectionable, this does not alter the fact that it will continue to be used by forest landowners throughout the State, and one that the state forest system is mandated to continue to demonstrate and research.

Response to Comment 255.6
The DFMP has provisions for protection and enhancement of late successional forest types. The DEIR analyzed these provisions and found the DFMP, as proposed, would not result in a significant adverse effect related to late successional forest values. Please refer to General Response 7 for further detail.

Response to Comment 255.7
The DFMP has provisions for protection of aesthetic and recreational values. The DEIR analyzed these provisions and found the DFMP, with the incorporation of the proposed mitigation measures, would not result in a significant adverse effect related to aesthetic or recreational values. See the Aesthetic Resource section beginning on page 82 and the Recreation Section beginning on page 399.

Response to Comment 255.8
Please refer to the DEIR (page 216) for a discussion that adequately explains the importance of late successional habitat.

Response to Comment 255.9
Beginning on page 216 of the DEIR is a discussion on acreages of CWHR habitat types on JDSF with those acres categorized as potential late successional habitat, including old-growth stands. CWHR types 5M, 5D, and 6 represent the maximum availability of late successional habitat on JDSF totaling 16,060 acres which include the old-growth stands of 459 acres. As stated, these acres represent the maximum availability of late successional habitat, but require detailed analysis of individual stands to determine if the characteristics necessary to function as late successional forest are present. Also refer to General Response 7 for more information.

Response to Comment 255.10
Please refer to General Response 7.

Response to Comment 255.11
The concern about whether mature second growth stands on JDSF will be logged or protected is misplaced. CDF plans to both log and protect these stands, without detriment to the environment. Logging is not synonymous with stand removal. It is incorrect to assume that one has to choose between protecting and logging mature forest stands, and that logging in a mature forest stand will make it lose its value as mature forest. The majority of the harvest activities used on JDSF remove only a portion of the forest canopy. Some of these harvest methods increase the average size of the remaining trees by focusing on removal of the smaller trees, and promote multi-storied canopy, a characteristic of late-seral forests.

Forests are living systems that perpetually change as they grow with time. As a research and demonstration forest JDSF endeavors to cultivate the widest possible range of seral stages to provide a perpetually relevant laboratory for forest research in the redwood region. Mature forest stands on JDSF will be harvested but will be replaced by other stands as younger forests grow into the mature forest condition.

There has been no attempt to conceal the location of mature second growth on JDSF from the public. The plus/minus 18” dbh break in Figure 8 in the management plan and Figure F of the DEIR is the most statistically defensible presentation of this information. The actual spatial location of individual type polygons was aggregated to the level shown in Figures 8 and F to achieve satisfactory accuracy. The relative (non-spatial) distribution of more detailed forest types are believed to be sufficiently accurate to support WHR wildlife analyses. The rapid

development of GIS and satellite technology has enabled quick and easy display of spatial information. However, display of the resulting information often assumes a level of accuracy that is not warranted, as the results are presented with little thought to the statistical reliability of the data and is only rarely backed up with detailed ground based data. Although less detailed than many vegetation maps presented in other forest plans, CDF believes the Figure 8 and Figure F maps are the most scientifically credible presentation of the data. JDSF's vegetation coverage represents the standard of practice in the industry, and is based on a high quality data set.

Response to Comment 255.12
The conclusion that stands not included in late seral development areas will be logged to such a degree or in such a manner that a significant impact will occur is not correct. This conclusion is based on a faulty analysis and misunderstanding of the DFMP. The analysis completed did not consider the short-term harvest schedule or the silvicultural allocation plan. Including this information in the analysis would have indicated that the majority of the mature stands are not proposed for harvest in the short term, and the silvicultural allocation plan (SAP) has not "targeted" these types of stands for even-age management. The SAP provides a balanced approach that includes a mix of vegetation classes in the even-age and uneven-aged management areas. Refer to response WW-237.1 for more information.

Furthermore, the age of the young-growth stands may or may not have as much relevance to late successional development and its functionality as does presence, absence, or recruitability of required habitat components (snags, down logs, stand decadence, etc.). Stands to be considered for late successional development will require detailed analysis to determine if the characteristics necessary to function as late successional forest are present or available for recruitment.

Response to Comment 255.13
Dr. Thornburgh conceptualized late seral characteristics development in young-growth stands for qualitative analysis of JDSF. This analysis was performed to describe stand changes expected over time within the young-growth present on JDSF and its progression toward a late seral condition. Stands of 40-60 year old timber would represent the younger portion of the age spectrum in present stands, which would be managed to eventually achieve late seral characteristic development. Older stands to be managed for this purpose may achieve late seral characteristic development in a shorter time frame. This provides for a conservative estimate of late seral characteristic development in young-growth stands to be managed for this purpose, and avoids overstating results.

Response to Comment 255.14
As contained on DEIR page 179, a qualitative analysis of late seral characteristic development was performed with a complete discussion in Appendix 8. This was based on the conceptual changes that will occur following the selective harvest of an even-aged timber stand as found on JDSF. Areas where late seral development will be managed for is described on DEIR pages 178-179.

Response to Comment 255.15
Current conditions, proposed management activities, and future outcomes are provided and well described in the DFMP. The DEIR re-iterates this information with adequate analysis also provided to enable the public to adequately assess potential impacts.

Response to Comment 255.16
Areas where late seral development will be managed for is described on DEIR pages 178-179.

Response to Comment 255.17
Areas where late seral development will be managed for is described on DEIR pages 178-179. Fragmentation and connectivity issues are discussed in the section on Wildlife Habitat beginning on DEIR page 203.

Response to Comment 255.18
Areas where late seral development will be managed for is described on DEIR pages 178-179. The JDSF DFMP provides for monitoring and adaptive management to evaluate progress toward the stated goals beginning on page 99.

Response to Comment 255.19-255.21
Please refer to General Response 1.

Response to Comment 255.22
Areas where late seral development will be managed for is described on DEIR pages 178-179. Fragmentation and connectivity issues are discussed in the section on Wildlife Habitat beginning on DEIR page 203.

Response to Comment 255.23
WLPZ buffers, late seral development areas and the Woodlands STA will be managed to develop high density, large tree, late seral characteristics that will contribute to the development of late successional forest.

When considered at the Forest or landscape scale, the edge effects of even-aged management areas on the development of late seral development in WLPZ buffers will not be significant. Recent even-aged harvest areas will not often be adjacent to other recent even-aged harvest areas. Even-aged areas will not all be subject to a sudden massive harvest at one point in time. Rather, stands will be managed sustainably such that all age classes will be represented on the landscape. This means that as the oldest stands are harvested, the next oldest stand will grow into the oldest age class and be ready for harvest in subsequent years. In order to accomplish the long rotation ages committed to in the management plan, only a small fraction of the even-aged area will be harvested each year. Consequently in any given year only a fraction of the even-aged area will be in the early seral condition in which edge effect on the adjoining WLPZ area is at a maximum. Edge effects on interior forest condition are ameliorated to the extent that the adjacent stand resembles that protected.

The majority of acres on JDSF will be managed under uneven-aged management systems. Consequently, even-aged areas will sometimes be located adjacent to uneven-aged areas and benefit from the filtering effect of the adjoining uneven-aged stands.

Most even-aged management will be some form of variable retention, leaving varying overstory tree cover on the site after harvest. This will tend to reduce edge effects as compared to clearcuts where all overstory vegetation is removed.

The above facts in combination lead CDF to conclude that possible edge effects of even-aged stands next to WLPZ buffers will not be of sufficient impact to seriously impair the function of WLPZ buffers as areas that will develop late-seral characteristics.

Response to Comment 255.24
The DFMP refers to FPR 916.9 on page 70 regarding watercourse protection in watersheds with threatened or impaired values and is re-iterated in the DEIR on page 111. This includes the variable width Class II measures based on slope class. The FPRs provide for 50' minimum width buffer on slopes <30%, 75' for slopes 30-50%, and 100' for slopes >50%. The DFMP also provides for expanded zone widths where appropriate such as areas involving unstable soils, etc.

The DEIR on page 107 provides an estimate of the mileage of Class II watercourses thought to exist on JDSF at 186 miles. Site-specific information on lengths of Class II watercourses by slope class is unknown, and will be obtained at the project level.

Response to Comment 255.25
This comment is correct; there are discrepancies in the WLPZ acreage presented in the DEIR and the DFMP. The WLPZ and late seral acreage estimates presented in the DFMP are correct. The discrepancies resulted from the DEIR's inadvertent use of acreage estimations developed to test the reliability of the DFMP estimations of WLPZ buffer area. As part of the DEIR analysis, an independent GIS acreage estimate of the area depicted in Figure H as Riparian Zone was developed. Based on this estimate, approximately 7,753 acres are within the mapped Riparian Zone and would be classified as WLPZ buffers. The 7,753-acreage figure was inadvertently used in the DEIR rather than the 7,440 figure. Although these estimates are not exactly the same, the two are in relatively close agreement.

The next to last paragraph on DEIR page 109 should have read as follows to maintain consistency between the documents:

JDSF contains approximately 7,440 acres of riparian zone within 150 feet and 100 feet of Class I and Class II watercourses respectively. of these approximately:

- 22% are in CWHR size class 6 [multi-storied with a Quadratic Mean Diameter (QMD) >24 inches DBH];
- 41% are in CWHR size class 5 (QMD >24 inches DBH);

- 22% are in CWHR 4 (QMD 11-24 inches DBH);
- 11% are in CWHR 3 (QMD 6-11 inches DBH);
- 3% are in CWHR size classes 2 (QMD 1-6 inches DBH);
- <1% is in CWHR size classes 1 (QMD <1 inch DBH) and
- 1% is in pygmy forest, grass, and brush.

CWHR 5 and 6 stands, which compose 71% of Class I and 57% of Class II watercourse WLPZ vegetation types, are many times considered representative of late successional habitat (see Section VII-6.6: Wildlife).

There are 9,680 acres of special concern areas that will be managed to develop late seral characteristics. This acreage represents the area within the following special concern areas:

- old growth groves (459 acres),
- late seral development areas (780 acres)
- Woodlands Special Treatment Area (2,241 acres (2,511 acres minus the 270 acres of the Railroad Gulch study)), and
- Class I and II WLPZ (6,200 of the total 7,440 WLPZ acres that do not overlap other late seral development areas).

The 11,190-acre figure from the DEIR is incorrect. It was arrived at by adding the acres in the above special concern areas, without subtracting the 270 acres of the Railroad Gulch study areas and recognizing that some of the areas overlap. The following pages of the DEIR should have indicated that there will be 9,680 acres of late seral development, or approximately 20% of the Forest, as indicated in the DFMP: pages 4, 89, 171, 178, 188, 260, 262, 263 and 271.

CDF disagrees with the commenter's assessment that these two discrepancies are substantial. The different acreage estimations are relatively minor, and do not change any of the results or conclusions of the DEIR. Also, these acreage estimates are approximate.

For example, it is an oversimplification to assume that only the above-mentioned areas will contain stands that exhibit late successional characteristics. Although not explicitly mapped, JDSF contains and will continue to cultivate, a healthy contingent of mature second growth stands throughout the forest that exhibit late successional characteristics. These stands will rotate across the landscape over time as mature stands are harvested, and younger stands grow into mature stands. JDSF does not attempt to cultivate all its mature forest in the above mentioned dedicated late seral management areas. In addition to the late seral management areas, JDSF also works to maintain a wide range of seral stages, including mature forest with late successional characteristics, throughout the Forest. This is evidence by the high levels of basal area retention within uneven-aged management regimes and the long rotation even-aged management committed to in the management plan.

Response to Comment 255.26
The DFMP and DEIR both contain language describing that the WLPZs on JDSF are to be managed for late seral habitat development. Page 109 of the DEIR describes that of the areas within the WLPZs on JDSF, approximately 71% of Class I and 57% of Class II watercourse vegetation types are CWHR 5 and 6 stands and that CWHR 5 and 6 stands are many times considered representative of late seral habitat. Individual areas would require site-specific verification to determine if late seral habitat is present within those CWHR 5 and 6 stands.

Response to Comment 255.27-255.34
Please refer to General Response 2.

Response to Comment 255.35
Discussion of marbled murrelets in the DEIR on page 248 identifies that murrelets are known to occur in Russian Gulch State Park. Murrelet presence in other areas of Mendocino County is also disclosed.

Response to Comment 255.36
Pt. Arena is approximately 30 miles south of JDSF and murrelet presence in this location is outside the area of consideration for impacts from proposed JDSF activities.

Response to Comment 255.37
Please refer to General Response 2.

Response to Comment 255.38-255.40
Please refer to General Response 1.

Response to Comment 255.41-255.43
Please refer to General Response 2.

Response to Comment 255.44
Please refer to General Response 1.

Response to Comment 255.45
It is currently unknown how many species of neotropical birds use JDSF, but the DEIR evaluates that approximately 133 species could occur on JDSF. Current information on total known species numbers on JDSF is not readily available. The species list provided on pages 223 and 224 includes those species that meet the definition of neotropical and whose range of migration includes JDSF.

Response to Comment 255.46
This comment expresses a viewpoint and is speculative. Protected riparian habitat will be interspersed through areas identified for retention, late seral development, uneven-aged management, and areas which are outside the harvest areas creating adequate habitat adjacent to and including the riparian areas for riparian dependent species.

Response to Comment 255.47
This provision of retaining the ten largest conifers within 50 feet of Class I watercourses per 330 lineal feet of watercourse, is FPR 916.9(i) requirement in watersheds with threatened or impaired values, and refers to both sides of the stream. It is required to retain the five largest conifers on each side of the stream within this zone.

Response to Comment 255.48
The 240 square foot conifer basal area retention is required within the WLPZ as contained on DEIR page 111, which is the entire WLPZ.

Response to Comment 255.49-255.51
Please refer to Response KB-255.46.

Response to Comment 255.52-255.54
Please refer to General Response 2.

Response to Comment 255.55 and 255.56
Please refer to General Response 1.

Response to Comment 255.57 and 255.58
See General Response 2.

Response to Comment 255.59
See General Response 1.

Response to Comment 255.60
A discussion on invasive exotic plant species is provided on DEIR page 134, where it is stated "The various roads and skid trails, forest openings, and other disturbance related to timber harvesting activities provide habitat for further infestation by invasive species."

Response to Comment 255.61
A discussion on invasive exotic plant species control is provided on DEIR pages 142 and 143 with 8 planned actions as contained in the DFMP.

Response to Comment 255.62
Please refer to Responses KB-255.60 and KB-255.61.

Response to Comment 255.63
Please refer to Responses KB-255.60 and KB-255.61. Also, the DEIR contains discussion regarding integrated pest management as contained in the DFMP, herbicide use, and regulatory constraints beginning on page 317.

Response to Comment 255.64
Please refer to the DEIR for information regarding existing pesticide use and future uses on JDSF (pages 318-319).

Response to Comment 255.65
Please refer to Response F8.8.

Response to Comment 255.66 and 255.67
Please refer to General Comment 1. This comment expresses a viewpoint and is speculative. The DEIR contains discussion regarding prescribed burning and slash treatment on pages 162 and 163.

Response to Comment 255.68
The DEIR contains language on page 180 indicating that large woody debris is an important attribute of late seral forest conditions. The DEIR also identifies on pages 163 and 164 that certain salvage sawlogs may be purchased from JDSF subject to permit constraints established by the Forest Manager and that all log locations are pre specified. The DEIR also provides discussion regarding the locations of designated late seral development areas. This provides control for where salvage operations may occur subject to constraints, while allowing for large woody debris to contribute to late seral development where specified. The discussion of potential down wood removal in the DEIR on pages 203 and 204 is in regards to unhealthy levels of down wood and potential effects on forest health and public safety. This consideration is subject to evaluation before management activities proceed.

Response to Comment 255.69
Please refer to Response KB-255.68.

Response to Comment 255.70 and 255.71
Please refer to General Response 1.

Response to Comment 255.72
As stated on page 18 of the DEIR, "When complete, the Final EIR will be reviewed and considered by the Director of CDF, and if found to be in compliance with CEQA, the Director of CDF may certify the Final EIR. Following certification of the Final EIR, the Board of Forestry will review and approve a JDSF Management Plan. The Management Plan approved by the Board will be consistent with the Final EIR. All mitigation measures developed in the Final EIR will be incorporated into the approved JDSF Management Plan." Again, the Director certifies the EIR and the Board is responsible for approving the JDSF Management Plan. Also, please refer to Response GJ-236.53.

Response to Comment 255.73
Please refer to Response KB-255.72.

PC-258

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RECEIVED
JUL 19 2002

July 18, 2002

Mr. Christopher Rowney
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

RE: DEIR for Jackson Demonstration State Forest Draft Management Plan

Dear Mr. Rowney:

Inexplicably, the draft EIR does not consider cumulative impacts. Indeed, it states: "CEQA also requires an examination of cumulative and growth-inducing effects. These have little or no applicability to the JDSF Management Plan project." (DEIR, p. 79.) Elsewhere, it states that "cumulative impacts assessments are inherent in the programmatic approach to development (sic) the JDSF Management Plan EIR." (DEIR, p. 429.)

It also claims that cumulative impacts were considered in various specific resource sections. (DEIR, p. 429.) But a review of those sections shows that for the most part cumulative impacts are not even mentioned, let alone considered.[1]

The DEIR's lack of cumulative impacts analyses is perplexing, because it is a program EIR. One of the major purposes and benefits of a program EIR is its capacity to measure cumulative impacts that tend to get slighted in a project-level EIR. According to the CEQA Guidelines:

> Use of a program EIR can provide the following advantages. The program EIR can:

[1] In one section in which they are mentioned, air quality, the analysis errs in evaluating them. If the project area is "non-attainment for PM10 with respect to the State PM 10 standards," it follows that any additional PM10 from activities in JDSF will have a cumulative impact. (DEIR, p. 105.)

(1) Provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action,

(2) Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis.... (CEQA guidelines, § 15168, subd. (b)(1)-(2).)

In light of the purpose and advantages of a program EIR, the failure to analyze cumulative impacts is baffling. And the omission in this case is especially serious, because the draft management plan includes a five-year schedule of actual, known future logging operations. What are the cumulative effects of these projects combined with one another, combined with past projects, combined with present ones, and combined with future ones? The answer to these questions is the essence of a cumulative impact analysis, but it does not appear anywhere in the draft EIR.

Simply put, there is no consideration whatsoever of past, present, or future cumulative impacts in JDSF, that is, how the hundreds of past, present, and future projects have combined or may combine to cumulatively affect the environment. One can pick virtually any environmental concern—marbled murrelet, coho salmon, water drafting, sedimentation, rare or threatened plants—and not know to what extent they may be cumulatively affected by the many logging operations that have occurred, are occurring, and will occur in JDSF.

Nor is there any consideration of how the management of JDSF may combine with projects on the lands surrounding it. Much of JDSF is surrounded by private timberland that is aggressively managed. How will the incremental effects of the past, present, and future projects on JDSF combine with the incremental effects of projects on surrounding lands? There is absolutely no consideration of these potential cumulative impacts in the draft EIR.

The omission of consideration of cumulative impacts is troubling in this case for another reason, namely that CDF does not properly or effectively evaluate cumulative impacts on a THP–by–THP basis. This is the conclusion not only of CDF's own task force, but of every independent and agency evaluation of CDF's THP program. We attach many of these reports. They are remarkable for their common agreement that CDF's program fails to effectively measure cumulative impacts.

The draft EIR for JDSF represents a rare opportunity to evaluate cumulative impacts on a landscape or watershed basis—something long recommended by

virtually every analysis of the THP program. Yet the draft EIR does not consider cumulative impacts, let alone consider them from a wider landscape or watershed perspective.

We attach the following documents:

Exh. A – Little Hoover Commission, *Timber Harvest Plan: A Flawed Effort to Balance Economic and Environmental Needs*

Exh. B – LSA Associates, *Final Report: Conclusions and Recommendations for Strengthening the Review and Evaluation of Timber Harvest Plans*

Exh. C – 61 Fed.Reg. 56138: *Endangered and Threatened Species: Threatened Status for Central California Coast Coho Salmon*

Exh. D – July 28, 1997, Memorandum From Division Of Mines And Geology To CDF re THP 1-97-232 HUM

Exh. E – August 21, 1997, Memorandum From Division Of Mines And Geology To CDF re Bear Creek Drainage

Exh. F – 1997 letter from Alexis Strauss, acting director of the Water Division of the United States Environmental Protection Agency to the California Board of Forestry

Exh. G – October 17, 1997, letter from National Marine Fisheries Service (NMFS) to CDF

Exh. H – September 11, 1997, article appearing in the Humboldt Beacon: *CDF Says Logging Has Adverse Effect*

Exh. I – October 14, 1997, Memorandum from Department of Fish and Game to CDF re fish habitat conditions in Bear Creek

Exh. J – November 25, 1997, article appearing in the San Jose Mercury News, *Critics scorch forestry agency*

Exh. K – January 22, 1998, letter from NMFS to the Regional Water Quality Control Board

Exh. L – February 11, 1998, letter from CDF to Pacific Lumber Co.

Exh. M – April 7, 1998, letter from NMFS to CDF

Exh. N – November 20, 1998, Water Quality Control Board, Executive Officer's Summary Report: *Cumulative Watershed Effects Assessment on North Coast Timberlands*

Exh. O – January 21, 1999, letter from CDF to Pacific lumber Co.

Exh. P – May 24, 1999, letter from Dr. Leslie Reid to Assemblyman Fred Keeley; Dr. Leslie Reid: *Forest Practice Rules and cumulative watershed impacts in California*

Exh. Q – May 26, 1999, article appearing in the San Diego Union-Tribune: *Logging regulation should be tightened, scientist says*

Exh. R – Scientific Review Panel (June 1999): *Report of the Scientific Review Panel on California Forest Practice Rules and Salmonid Habitat*

Exh. S – *Cumulative Impacts Analysis: A Report of CDF Director's THP Task Force* (July 1999)

Exh. T – December 2, 1999, letter from NMFS to CDF

Exh. U – 65 Fed.Reg. 36074: *Endangered And Threatened Species: Threatened Status for One Steelhead Evolutionarily Significant Unit in California*

Exh. V – The University of California Committee on Cumulative Watershed Effects (June 2001): *A Scientific Basis for the Prediction of Cumulative Watershed Effects*

Exh. W – August 2, 2001, Water Quality Control Board, Executive Officer's Summary Report: *Timber Harvest Division Regulatory Coordination*

In one way or another, all of these reports, studies, and miscellaneous documents demonstrate that CDF has failed to consider cumulative impacts in its environmental review of logging operations in California. Unfortunately, CDF

and the Board continue that trend in the draft EIR.

Because the draft EIR fails to consider cumulative impacts, it cannot be approved under the California Environmental Quality Act.

Very truly yours,

Paul V. Carroll

5

Letter PC-258

For all comments please refer to General Response 9.

JL-262

RECEIVED BY
Director's Office
JUL 19 2002
Department of Forestry and
Fire Protection

Andrea Tuttle, Director
California Dept. of Forestry & Fire Protection
P.O. Box 944246
Sacramento, CA 94244

July 15, 2002

Re: Comments on Jackson State Forest Management Plan

plan actions and make decisions

1 **Clearcut logging**: Potential environmental impacts to Jackson State Forest and cumulative watershed impacts are not adequately addressed in this Management Plan. Clearcut logging is known to have profound negative impact on the biodiversity of the natural landscape and this warning was reiterated in a report by the Forest and Rangeland Resources Assessment Program fifteen years ago within your own department (Calif. Dept of Forestry and Fire Protection 1988). Current clearcut practices cause local area fragmentation of natural vegetation and contribute to broad-scale fragmentation across a region. When a management plan advocates clearcut logging it declares that there are no significant adverse environmental effects to the plan area without justification for this assessment.
They still are breaking up the forest into thirds--1/3 selection logging, 1/3 even-aged (including clearcutting that is dressed up as "variable retention" i.e., keep a few trees here and there), and 1/3 group selection (which is small patch clearcuts of 2.5-5 acres).

2 I am trying to focus on certain high priority features within the forest as a whole: Protection for
3 the ~10,000 acres of 80-110 year old second growth on the west side of the forest; broad
4 no-cut riparian protection zones for both Class I and Class II (no fish)
5 streams; selection logging as the principle logging system in the timber harvest program; and no clearcutting however they want to call it.

Mushrooms need a relatively moist environment to thrive--one not likely to occur in a clearcut, for instance; potentially rare ground lichen *Cladina portentosa ssp. pacifica* **even the most protective of their proposals was not particularly protective, especially in relation to Class II streams (no fish, but other aquatic life present). Class IIs are very important in my book.**

6 **Environmental Impacts – Herbicide Use:** It is not documented in this THP if herbicides are to be applied following clearcut logging. THP submitters may not avoid CEQA review of impacts due to herbicides by failing to document its intended use until after a plan is approved. By deferring herbicide application to a later date, the project is segmented into two pieces, which is not lawful under CEQA, because the cumulative impacts of the two parts cannot adequately be considered. The use of herbicides following logging operations is part of the "project" described within a THP pursuant to CEQA (14 CCR§15378, 4 CCR§895.1). Cumulative impact analysis must include reasonably anticipated future activities associated with a project (14 CCR §15130b).

Jackson State Demonstration Forest is one few public lands on the north coast south of Humboldt County. An accurate count is not available of the number of visitors that use the

forest but do not use the campground (and are thus not tallied). Groups such as the California Lichen Society and California Native Plant Society (with local and out of area members) plan field trips to sites within JSDF. Visitors contribute to the local economy by eating at local restaurants and by staying at local inns.

Also they try and minimize the number of people who use the forest, linking that number mostly to the campground tally, so if your folks don't use the campgrounds, it would be good to mention how many people of yours come up every year, at what time of year, and what sort of inputs you make to the local economy—stay at B & B, eat at restaurants, etc.

Thank you for taking time to review this letter.

Sincerely,

Julia Larke

Julia Larke, Timber Harvest Plan Reviewer

References:

California Dept. Fish & Game. 2000. *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.*

California Dept. of Forestry and Fire Protection. 1988. *California's forests and rangelands: growing conflict over changing uses. Forest and Rangeland Resources Assessment Program (FRRAP)* @fire.ca.gov

California Native Plant Society. 2001. Electronic Inventory of Rare and Endangered Plants of California, 6th Edition. CNPS, Sacramento, CA. @cnps.org

Tuttle, A. 1999. *Memo: CDF Guidelines for Species Surveys*. California Dept. of Forestry and Fire Protection, Sacramento, CA. @fire.ca.gov

Hickman, J. C., ed. 1993. *The Jepson Manual*. University of California Press, Berkeley, CA.

Environmental Impact Statement (EIS) - According to The Council on Environmental Quality, NEPA regulations 40 CFR 1500-8, "1502.1 Purpose. The primary purpose of an Environmental Impact Statement is to serve as an action-forcing device to insure that the policies and goals defined in the [National Environmental Policy] Act are infused into the ongoing programs and actions of the Federal Government. It shall provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. .... It shall be used by Federal officials in conjunction with other relevant material to plan actions and make decisions."

An EIS is a detailed written statement that documents the proposed action, alternatives to the proposed action, the characteristics of the environment that is potentially affected by the proposed action, and the environmental consequences of implementing each alternative. An EIS follows a prescribed outline and includes a list of those who prepared and consulted in its preparation. Public review of a draft EIS is required before the final EIS is prepared. An EIS must meet more precise requirements for the range of alternatives analyzed and the quality of scientific information included than EAs. EISs also mandate greater public input than EAs.

Letter JL-262

Response to Comment 262.1
Please refer to General Responses 1, 2, 8 and 9. Biodiversity will be maintained in JDSF through development of diverse habitat types across the Forest. The range of silviculture prescriptions proposed will provide for a diverse landscape.

Response to Comment 262.2
Please refer to General Response 7.

Response to Comment 262.3
The class I and II riparian protection measures were extensively discussed in the DEIR. One mitigation measure to address LWD issues was developed. The DEIR found that the DFMP as mitigated would not result is significant environmental impact to riparian habitats.

Response to Comment 262.4
Please refer to General Response 1. The DFMP presents a balanced approach to the application of silvicultural treatments.

Response to Comment 262.5
Please refer to General Response 1.

Response to Comment 262.6
Projected pesticide use is discussed on page 319 of the DEIR, and includes the potential application of pesticides following timber harvest. Compliance with CEQA is analyzed on pages 323-325. Please refer to page 324, Impact 3, for a discussion regarding cumulative impacts of herbicide use on THPs. Also, please refer to General Response 6.

RG263

RECEIVED
JUL 19 2002

Richard Gienger
Box 283, Whitethorn
rgrocks@humboldt.net
California 95589
707-923-2931
Fax: 923-4210
19 July 2002

Christopher P. Rowney, Program Manager
Demonstration State Forests
California Department of Forestry and Fire Protection
P.O. Box 944246, Sacramento, CA 94244-2460

Dear Chris Rowney:

I would like to draw your attention, and my support, to the Salmon and Steelhead Recovery Coalition letter on the Jackson Demonstration State Forest Draft Forest Management Plan and Draft Environmental Impact Report. I have a few comments on the Draft Forest Management plan as well.

I can appreciate and support some form of timber harvesting in JDSF, but with certain constraints such as those outlined in the SSRC letter. I do strongly advocate, however, that the purpose of JDSF needs to be rebalanced with the needs of anadromous fisheries protection and recovery on par with any harvest focus. There are no fisheries biologist positions listed on the staff roles. A comprehensive protection and recovery plan for anadromous fisheries and habitat should be an integral part of the JDSF Forest Management Plan (FMP). DF&G and WQ staff should be an integral part of that process, and in the implementation of such a protection and recovery plan. It is assumed that CDF and CGS staff are already available.

A particular detail that is important for the FMP and an integral Fisheries Protection and Recovery Plan -- and which is missing in the current Draft -- is adequate protection for Class III watercourses. Appropriate measures need to be included for the varying characteristics of Class IIIs. Protection measures as outlined in the quite comprehensive rules package submitted by WQ to the Board of Forestry several years ago, 1999 I think, should be included for implementation in JDSF.

Sincerely,

Richard Gienger

Richard Gienger

Letter RG-263

Response to Comment 263.1
Please refer to General Response 1. The DEIR completed an analysis of the practices proposed in the DFMP to assess the potential impacts on anadromous fisheries. Mitigations were developed to ensure LWD levels would not be significantly affected. The DEIR found that the DFMP as mitigated would provide protection to anadromous fish and their habitat and contribute to trend of improving conditions. Although not specifically a recovery plan for anadromous fish, the DFMP will contribute to their recovery.

Response to Comment 263.2
Class III watercourse-specific concerns will be addressed at the project level during THP preparation. 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 watercourses. 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.

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."***

JM296

July 17, 2002

Dear Mr. Rowney,

I am writing to you from Wisconsin , a state in which all our Old Growth Forest was clear cut by the year 1900. This is also the state which John Muir called home between the years 1849 and 1863. Not having these forest resources makes me appreciate the few that still do exists. I realize that the majority of JDSF is second growth but trees grow much faster in the relatively mild California climate than they do here in the mid west, (I refer to the Official U.S.D.A Hardiness Zone Map).

No doubt that Jackson Demonstration State Forest is in better condition today than when it was first acquired in 1947. This is now 55 years later. Times and priorities have changed. Our forests here in the US are being cut at an alarming rate. Back in 1947 the population was significantly lower as was the carbon dioxide emissions from automobiles and industries. And yes, this is the same carbon dioxide that trees breath in and then release oxygen which we humans breath. The JDSF has now semi recovered from its former destruction with native plants and animal species returning, such as the Marbled Murrelet (listed under the Federal Endangered Species Act), which you negate to mention. 1

When I come to California weather I am visiting my relatives in Santa Rosa or my friends in Willits one of the highlights is a trip to Jackson Demonstration State forest. As the snow is falling here in Wisconsin I treasure walking through the JDSF and as a member of several Mycological Societies including the Mycological Society of San Francisco I am amazed at the fungal diversity which I find. It is clear that JDSF is a valuable resource to tourists as well as to the residents of California and should be managed for their enjoyment, education and inspiration. 2 Harvesting timber and then spreading herbicides is not an activity commensurate with the best interest of the forest ecosystem, the plants and animals which inhabit it or the people who enjoy it. 3

In closing I find that in this modern "information age" it is questionable, no suspect, that you will not accept e-mail or fax comments. Even financial institutions accept fax signatures on important documents as does the US Forest Service on timber sales. I believe this derailment of the democratic process is evidence of the erosion of ethics by public servants who seek to please highly paid lobbyists instead of protecting and preserving the resources they were entrusted with. 4

Sincerely,
Jim Maurer

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Milwaukee, Wisconsin 53208-3112
1 (414) 933-4558 or 4212

RECEIVED
JUL 18 2002
BY

Letter JM-296

Response to Comment 296.1
Please refer to General Response 5.

Response to Comment 296.2
Please refer to Response 215.2.

Response to Comment 296.3
Please refer to General Response 1.

Response to Comment 296.4
Please refer to General Response 3.

EM-298

July 15, 2002

Dear Mr. Rowney,

I am very concerned about the current policies governing the management of the old growth forests, especially redwoods. The redwoods are a national treasure. These ancient trees have a value to the American public far beyond the money raised from their sale as timber. There must be a comprehensive plan in place that protects and supports the trees, and the forest habitat that they inhabit and create by their presence.

1 Logging in these areas should only be allowed in a very minimal way for thinning for the sake of the health of the forest. Roads that are built should happen only if it is absolutely necessary and must not be allowed to damage the health of the forest habitat. These companies should also bear the full cost of their logging activities, and the building and removal of the roads they use when they are done. Please stop subsidizing their business practices with taxpayer money.

2 Fire management is an important part of this plan, but it should not include enticements to companies logging like allowing them to cut down large standing trees. The large trees must be allowed to stand to prevent the dangerous fires that develop in areas where small brush is allowed to build up, and temperatures increase due to the lack of shade from the large trees.

1 I do not support any massive logging activities and I implore you to leave this legacy intact for the future. In the last three or four decades, we have over harvested this resource. We must allow them to grow back before we think about any large scale logging operations.

Thank You,

Ellen Maisen

Ellen Maisen

JUL 9 2002

Letter EM-298

Response to Comment 298.1
Please refer to General Response 1. Forest health issues are addressed in the DFMP.

Response to Comment 298.2
The DFMP includes fire protection measures that were analyzed in the DEIR. The fire protection measures will not encourage logging companies to cut down large trees. Shaded fuel breaks may be developed where an open understory with well-spaced large trees would provide a defensible location to fight a wildfire.

EG-328

Ernest Goitein
167 Almendral Avenue
Atherton, California 94027-4003

July 17, 2002

Mr. Chris Rowney, California Dept. of Forestry
1416 19th Street
Sacramento, CA 94244

Subject: Draft Management Plan and EIR for Jackson State Forest Demonstration

Dear Mr. Rowney:

I strongly oppose the Draft Management Plan for Jackson State Forest. I oppose the plan's clear cutting, large-scale commercial logging, cutting of the oldest second-growth stands, inadequate stream protection, herbicide use, and lack of a plan to expand recreation. I personally want Jackson State restored to an old growth redwood forest for habitat, recreation, education and research.

1 The Draft EIR fails to evaluate the restoration alternative that I think should have been listed as an alternative under the CEQA rules. The closest alternative, Alternative E, does not restrict timber operations to those needed to restore the forest to old growth, to enhance recreational
2 opportunities or to improve wildlife and botanical habitats. It does not direct that proceeds from timber harvests be spent within Jackson State.

3 The DEIR does not present data on the cumulative impacts of past and proposed logging
4 operations. The stream protection measures in the DEIR are not scientifically justified, and therefore do not meet CEQA requirements. The DEIR does not acknowledge the critical habitat
5 contribution that Jackson State makes to allow for the recovery of the Marbled Murrelet.

6 For all of the above reasons, the Draft EIR fails to meet the CEQA requirements of an EIR. The Draft Management Plan must be revised to evaluate and list the mitigation required to
7 compensate for the loss of habitat, stream degradation, effect on the endangered and threatened species listed by California, the USF&WS, and the NMFS.

Sincerely,

Ernest Goitein

JUL 22 2002

Letter EG-328

Response to Comments 328.1-328.6
Please refer to responses F3.1-F3.6, respectively.

Response to Comment 328.7
Please refer to General Response 1. The DEIR completed an analysis of the proposed DFMP to determine if the proposed project would result in significant environmental effects, including effects on endangered and threatened species. The DEIR found that the DFMP with the mitigations developed in the DEIR will not result in a significant adverse environmental impact. Part of the Forest Management Plan (FMP) approval process outlined in the DEIR is that the Final FMP will include any mitigation measures developed in the EIR.

JS-331

The Willits Environmental Center

JUL 22 2002

July 13, 2002

Christopher Rowney, Program Manager
California Department of Forestry
P.O. Box 944246
Sacramento, CA 94244-2460

Dear Mr. Rowney,

With the Jackson Demonstration State Forest (JDSF) located just to our west, the Willits Environmental Center (WEC) is particularly well situated to articulate the environmental perspective on the Environmental Impact Report (EIR) on the proposed forest management plans submitted to the Board of Forestry (BOF) by the California Department of Forestry (CDF). The following shall constitute our official comments regarding the JDSF EIR.

1 We have several strong objections to the EIR's characterization of CDF's preferred Alternative C as a "conservation oriented approach". (p.62) By its own definition Alternative C is a plan that was "...developed in terms of maintaining a high level of timber production..." (p.62) This alternative contains the highest level of timber cut of all the alternatives and includes one third clear-cuts which are euphemistically referred to as "even aged management". Alternative C also allows for the use of toxic herbicides, for building new logging roads and for tiny stream side no cut zones of 25 feet. The so called "conservation" in this alternative is the narrow strips of trees left standing between the clear-cuts which they benignly refer to as "wildlife corridors" or "recreation corridors". To call this approach "conservation oriented" is knowingly deceptive and highly misleading.

2 We also must raise our strong objection to an issue that is not addressed in the EIR; the matter of CDF's motivation for its preferred Alternative C. Since the government of California has allowed the CDF to spend the revenues from timber sales without legislative oversight, it is clearly to CDF's financial advantage to maximize their sale of timber on State forests. Considering this motive renders CDF's claims of a "conservation oriented

316 South Main Street • Willits, CA 95490 • (707) 459-4110

approach" dubious and lacking in credibility.

The science of silviculture is still very much in an experimental stage, but we have plenty enough evidence already to know that practices such as clear-cutting, herbicide spraying, road building and narrow stream side buffers do NOT qualify as a "conservation oriented approach". Alternative C does not meet the JDSF's management goal to "minimize environmental effects" (p.61 EIR) and therefore should NOT be considered as a viable alternative in this EIR. 1

Before we comment on Alternative E, which is indeed the only viable environmental alternative, there is an important point to be made that is missed in this EIR. Alternatives A through E submitted by the CDF were arranged in a very specific order to make their preferred Alternative C seem to be the most moderate proposal and to make Alternative E appear as extreme. This ordering of the alternatives was designed to give the impression that Alternative C is the most reasonable compromise position. 3 The reality is, however, that Alternative C is the most extreme proposal both in terms of its destructive logging practices and its lack of commitment to low impact recreational uses; while Alternative E is unquestionably the most moderate proposal, with reasonable provisions for restoration logging and an increased emphasis on the broader public interest in low impact recreational uses.

We are encouraged to see the environmental Alternative E as one of the options prepared by the CDF. If nothing else, Alternative E proves that the CDF really does know the difference between a conservation oriented approach and a timber production approach. This distinction is stated overtly on page 77 of the EIR, "Alternative E, with its habitat emphasis, is the environmentally superior alternative and would result in the least severe impacts, particularly to wildlife resources." Sadly, there are already countless swaths of clear-cut forests that can be used to study their devastating environmental impacts without creating more in the JDSF. The JDSF represents a rare opportunity to demonstrate the regeneration of old-growth forests on public lands. 4

There seems to be a great deal of confusion about the purpose of the JDSF, and its no wonder considering the babbling language in the Legislative Mandate for the State Forest System. The Mandate declares that, "Timber production will be the primary land use in JDSF." and that the JDSF, "be made fully productive ...predicated on waning supplies of original old-growth timber." It then goes on to state that the JDSF was acquired for the, "purpose of demonstrating economical forest management." Sorry fellas, you can't have it both ways. Logging on the JDSF cannot simultaneously be predicated on full production driven by consumer demand for forest products and on the economical

Page 2 of 4

management of the timber supply. These two management goals are mutually exclusive. Consumer demand for forest products bares no relationship to the amount of timber a natural forest ecosystem can economically supply. The only environmentally legitimate way to solve this mandated inconsistency is to de-link timber production on the JDSF from consumer demand for forest products. Once this exercise in logic is performed it becomes obvious that Alternative C which relies on standard timber practices to maximize production based on consumer demand is NOT a viable Alternative. Whereas Alternative E, which allows for timber sales based on restoration logging, is the real mandate for demonstrating forest management techniques on the JDSF. 5

The section on the local economy in the EIR attempts mightily to show that the timber industry is of vital importance to the economy of Mendocino County, and that the JDSF makes a significant contribution to that output, but a closer inspection of the figures proves otherwise. As employment in the lumber and wood products industries has declined from 2,400 in 1996 to 2,030 in 2001, the overall unemployment rate in the County has also declined from 8.5% in 1996 to 6.6% in 2001. In other words, overall employment in the County has increased despite a decline in the timber industry. The reason for this is that the overall employment rate in the County is inextricably tied to the larger state, national and global economies, while employment in the timber industry is dependent on there being merchantable timber to cut. This being the case, the timber industry in Mendocino County will continue to decline into the foreseeable future and lumber and wood products will never again be the major employer they once were in this County. As for the JDSF's contribution to timber production in the County, it represented a minuscule 1.54% in 2000. The JDSF cannot realistically be expected to prop up the sagging timber industry in Mendocino County. In terms of revenues to the County from timber sales, the JDSF contributed a mere $282 thousand which accounted for only .044% of total taxable sales. For this pittance, the people of California should clear-cut this priceless second growth forests as called for in Alternative C? 6

Finally, the EIR fails to calculate the economic benefits from Alternative E as a result of a higher rate of recreational use and an increase in employment from restoration work. 7

Though Alternative D is certainly superior to C, it still does not meet the requirement of "minimizing environmental effects." Logging in Alternative D is double that of E. The reason for this is that in Alternative D logging is used to develop habitat but not to promote late seral development. This difference in emphasis opens up areas to logging that would better be left alone. Also, unlike Alternative E, D allows for the development of new rock quarries within the JDSF. Quarries have a profound impact on the environment - altering drainage patterns, producing large amounts of dust and silt, increasing traffic of large trucks, loud jarring noises and many other disturbances. Another 8

8 significant difference between Alternatives E and D is that E puts a much stronger emphasis on road abandonment which is an essential component for the regeneration of old-growth habitat.

The Director of CDF is required to determine if this EIR is in compliance with the California Environmental Quality Act (CEQA). It is our contention that it is not. CEQA requires that the Alternative with the least environmental impacts be chosen unless it can be shown that a more damaging Alternative is clearly in the public's best interest. Despite this mandate, the CDF has chosen the most environmentally destructive Alternative, and, for the many reasons outlined above, has failed to prove that it is in the public's best interest. We therefor call on the Director to use your discretion to select an Alternative management strategy to that preferred by the CDF. To comply with CEQA we urge the Director to forward Alternative E to the BOF as the Director's preferred Alternative. 9

We, the residents of the State of California living at this time in our history, have a tremendous opportunity and responsibility to manage wisely one of the States most precious natural resources. To even consider turning this rare patch of second growth redwood forest populated with 200 year old trees into a commercial tree farm is the height of human folly. If the Director and the BOF seriously consider this EIR within the context of our times, the only Alternative that makes any sense for the people of California is to use the JDSF to study in all its complexities the regeneration of an old-growth forest.

Sincerely,

Jon Spitz

Jon Spitz, Board Member
The Willits Environmental Center

Page 4 of 4

Letter JS-331 (Willits Environmental Center)

Response to Comment 331.1
Alternative C was developed to comply with the intent of the Legislative mandate indicated on DEIR pages 9-11. This Alternative provides for an annual harvest level of 31-33 MMBF through the Plan period while the estimated total JDSF annual growth is estimated at 65 MMBF and the constrained LTSY annual growth estimated between 40 to 50 MMBF. This provides for timber growth exceeding harvest levels and complying with the Legislative intent. With the provisions contained in the DFMP regarding resource protection and providing for non-declining inventories, it is not misleading to describe this Alternative (C) as a "conservation oriented approach," while attaining management goals and complying with the Legislative mandates.

For herbicides please refer to Response BG-114.2.

Response to Comment 331.2
Please refer to Response 331.1.

Response to Comment 331.3
The range of alternatives considered in large part, were derived from comments received during public scoping meetings, letters from concerned citizens, and from a Citizen's Advisory Committee appointed by the Director of CDF. Please refer to DEIR pages 6 and 7.

Response to Comment 331.4
This comment expresses an opinion. No response is required.

Response to Comment 331.5
Alternative C was developed based on the consideration of LTSY. Please refer to Response JS-331.1.

Response to Comment 331.6
This comment expresses an opinion. No response is required.

Response to Comment 331.7
Page 406 of the DEIR contains discussion that "JDSF could accommodate a 25% increase in campground and picnic capacity and a doubling of hiking trail capacity without severely impacting the Forest's recreation program resources." The current sustainable campground capacity is identified at 24,059 camper-days and a potential sustainable level of 30,074 camper days without exceeding the recreational carrying capacity of JDSF. Day use is identified at 90,082 visitor-days currently sustainable and 173,375 potentially sustainable. Given these recreational capacities, pages 41-42 of the DEIR state the actual camper-days in 1999 was over 12,000, while day use was estimated at four times camping usage (~60,000 total). The value of $20/day for forest recreation equates to an estimated $1.2 million. This analysis of economic benefits provided in the DEIR for recreation is described in terms of JDSF capacities and of

actual visitor use. Potential economic benefits from recreational use analyzed by Alternatives would be speculative. It would also be speculative to provide for an analysis of potential employment increases related to restoration in other Alternatives.

Response to Comment 331.8
This comment expresses an opinion. No response is required.

Response to Comment 331.9
This comment expresses an opinion. No response is required.

RJ-333

Ronnie James PO Box 1336 Mendocino, CA 95460 Ronnie@mcn.org

JUL 22 2002

Christopher P. Rowney
Demonstration State Forest Program Manager
California Department of Forestry & Fire Protection
PO Box 944246
Sacramento, CA 94244-2460

15 July 2002

Dear Sirs:

Please enter the following comments into the formal record for the Jackson Demonstration State Forest Management Plan Draft Dated May 17, 2002 and the Draft Environmental Impact Report for the Comprehensive Update to the Jackson Demonstration State Forest Draft Management Plan SCH #2000032002 Dated May 2002.

The 5425-acre Mendocino Woodlands Demonstration Area was gifted to the State of California by the United States Government with an In Perpetuity Gift Mandate that states "...said property shall be used exclusively for public park, recreation and conservation purposes." (Congress by Act of June 6, 1942 [56Stats.326; 16 USCA, 459r-459t]) In 1976 a 720-acre portion of the land was placed in the State Park system and subsequently recognized as a National Historic Landmark (NHL) by the Federal Government and listed on the State of California's State Register of Historic Places. Twenty five hundred ± acres of the land remaining within Jackson Forest was given the designation of Special Treatment Area (STA) (not to be confused with the designation in today's Forest Practice Manual). The STA also qualifies as a National Historic Landmark with a nomination currently pending before the Department of the Interior's Landmark Committee. The remaining 2155 acres has potential as a National Historic Landmark, however, the nomination has not yet been written.

State Public Law 5042 parallels Federal regulations and requires that the Management Plan and the EIR take into account how each will impact a public resource adjacent to a National Historic Landmark AND within an area with the potential for listing as a National Historic Landmark.

1 1) The Draft Management Plan and the Draft EIR for JDSF do not mention the National Historic Landmark status, State Register of Historic Places listing, the pending NHL and State Register listings, or the land outside the STA with potential for NHL listing, and how management will protect or impact these lands and listings.
I request the Management Plan and EIR address the National Historic Landmark listing for the State Park section adjacent to JDSF, the potential NHL lands not within the STA and the nominated Special Treatment Area.

2 2) The Draft Management Plan and the Draft EIR for JDSF do not mention the In Perpetuity Gift Mandate. In fact there are actions planned within the STA and other lands under the Mandate that completely ignore the Gift Mandate, which clearly states that the Federal Government can reclaim the lands should said Mandate not be upheld for a minimum period of three years.
The Management Plan and EIR must address the In Perpetuity Gift Mandate as it applies to lands within JDSF.

3 3) The Special Treatment Area contains numerous documented sites of national and state historic importance. The entire area was landscaped by FDR's New Deal Works Progress Administration in the late 1930's with the express intent that the lands mature as landscaped to form a natural redwood forest park (Don R. Hull, State Park Landscape Engineer, Master+As-Built MWDA 1938). This intent is part of the NHL's integrity. Figure H, Special Concern Areas Map in the Management Plan shows the entire STA slated for management for late seral development, which would destroy the historic integrity of the STA.
The Management Plan and EIR must address the impact and provide protection rather than destruction for the historic integrity of the STA, and potential and pending NHL nomination lands.

4 4) The Management Plan calls for creation of an additional Demonstration Area in Thompson Gulch within the STA. This is a thinly disguised attempt to get around the Gift Mandate, ignore the State and Federal Landmark nominations, and the historic integrity while harvesting the oldest stand of trees in the Special Treatment Area when a well developed, extensively used "Crown Jewel" (to quote CDF) Demonstration Area exists less than a mile away.
I request that the Management Plan and EIR eliminate the proposed Thompson Gulch Demonstration Area as it would destroy the integrity of the entire STA as a national and state Historic Resource.

5 **I request that the Management Plan and EIR clearly recognize and provide adequate protection for the integrity of the Historic Resource that comprises the 5425 acre Mendocino Woodlands Demonstration Area as required by Public Law 5042, the In Perpetuity Gift Mandate and Property Transfer Legislation.**

I request that the Mendocino Woodlands Special Treatment Area be transferred to the Department of Parks and Recreation which is qualified and designated to manage Historic Resources of national importance for the State of California.

6 **In conclusion I request that you deny certification for the Jackson Demonstration State Forest Management Plan Draft Dated May 17, 2002 and the Draft Environmental Impact Report for the Comprehensive Update to the Jackson Demonstration State Forest Draft Management Plan SCH #2000032002 Dated May 2002.**

Yours truly,

Ronnie James

Ronnie James
President, Ret., Board of Directors
Mendocino Woodlands Camp Association

Letter RJ-333

Response to Comment 333.1
Page 352 of the DEIR discusses the National Historic Landmark (NHL) status of the Mendocino Woodlands. CDF disagrees with the validity of the proposal to designate CDF lands as NHL Status. The proposed expansion area and the additional 22 structures do not meet reasonable criteria for designation as a NHL. Some of the structures do not exist and others are misdated or inaccurately described. As addressed in the DEIR, any historic structures that are present within JDSF, including the MWSTA, will be protected as required by laws and regulations. No further discussion is required in the DEIR.

Response to Comment 333.2
The comment is not consistent with legal interpretations of the original deed. Walter S. Rountree, Deputy Attorney General, in opinion 47-4 (March 31, 1947) provided an interpretation of the types of uses that would be allowed in the Mendocino Woodlands Area based on the language contained in the transfer deed. In that opinion, a letter from the Assistant Secretary of the Interior dated October 31, 1946 is quoted as follows:

I also believe that the harvesting of forest products in accordance with recognized conservation principles and practices, and the conducting of forest experiments and demonstrations would be compatible with the term "conservation purposes," since it is generally acknowledged that such economic and scientific utilization of timberland areas ultimately results in the conservation of our forest resources.

The Deputy Attorney General concurred with the Assistant Secretary of the Interior that the language of the deed does not preclude the logging proposed by the state.

Response to Comment 333.3
Please refer to Response 333.2, above. Allowing the lands to "mature as landscaped to form a natural redwood forest" as stated in the comment is consistent with the late seral development designation for the MWSTA.

Response to Comment 333.4
Please refer to General Response 2 and Response 333.1. Regarding Thompson Gulch, please see response to comment VT-241.27. This proposed harvest consists of a low thinning demonstration in the upper area of Thompson Gulch designed to eventually produce late-seral habitat with a large average tree size.

Response to Comments 333.5
Please refer to General Response 2 and Responses 333.1 and 333.2.

Response to Comments 333.6
The DEIR analyzed the potential impact of forest management on heritage resources that may be located within the MWSTA and found that silviculture activities have the potential for

adverse impacts to the cultural landscape associated with this heritage resource. However, those potential risks are addressed and removed through careful development of THPs with full consideration of potential impacts to these special heritage resources. No impacts were identified that would require the transfer of this parcel to the State Department of Parks and Recreation as mitigation.

ME2-335

Lark Camp
Music & Dance Celebration

JUL 2 2 2002

6/17/02

Christopher P. Rowney
Demonstration State Forest Program Manager
California Department of Forestry & Fire Protection
PO Box 944246
Sacramento, CA 94244-2460

Dear Sirs:

Please put the following comments into the formal record for the Jackson Demonstration State Forest Management Plan Draft Dated May 17, 2002 and the Draft Environmental Impact Report for the Comprehensive Update to the Jackson Demonstration State Forest Draft Management Plan SCH #2000032002 Dated May 2002.

The Mendocino Woodlands Demonstration Area was gifted to the State of California by the United States Government with an In Perpetuity Gift Mandate that states "said property shall be used exclusively for public park, recreation and conservation purposes." (Congress by Act of June 6, 1942 [56Stats.326; 16 USCA, 459r-459t]) In 1976 part of the lands were placed in the State Park system and subsequently recognized as a National Historic Landmark (NHL) by the Federal Government and listed on the State of California,s State Register of Historic Places. The lands remaining within Jackson Forest were given the designation of Special Treatment Area (STA) (not to be confused with the designation in today,s Forest Practice Manual). The STA also qualifies as a National Historic Landmark with a nomination currently pending before the Department of the Interior,s Landmark Committee.

State Public Law 5042 parallels Federal regulations and requires that the Management Plan and the EIR take into account how each will impact a public resource adjacent to a National Historic Landmark AND within an area with the potential for listing as a National Historic Landmark.

1 1) The Draft Management Plan and the Draft EIR for JDSF do not mention the National Historic Landmark status, State Register of Historic Places listing, or the pending NYL and State Register listings or how the management will impact these listings.
The Management Plan and EIR must address these listings.

2 2) The Draft Management Plan and the Draft EIR for JDSF do not mention the In Perpetuity Gift Mandate. In fact there are numerous plans for the management of JDSF that completely ignore the Gift Mandate. The Mandate clearly states that the Federal Government can reclaim the lands should the Mandate not be followed for a minimum period of three years. The Management Plan and EIR must address the In Perpetuity Gift Mandate.

3 3) The Special Treatment Area contains numerous documented sites of national and state historic importance. The entire area was landscaped by the Works Progress Administration in the late 1930,s with the express intent that the lands mature as landscaped to form a natural redwood forest park. Figure H, Special Concern Areas Map in the Management Plan actually shows the entire STA slated for management for Late Seral Development. This management plan would greatly impact the historic integrity of the entire STA

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Lark Camp

Music & Dance Celebration

The Management Plan and EIR must address the impact and provide protection for the historic integrity of the entire STA including the pending NHL nomination.

4 4) The Management Plan calls for creation of an additional Demonstration Area in the Thompson Gulch Area. This is a thinly discussed attempt to get around the Gift Mandate and ignore the State and Federal Landmark nominations, and the historic sites and integrity of that area in an effort to harvest the oldest stand of trees in the Special Treatment area. A well developed, extensively maintained and used Demonstration Area exists less than three quarters of a mile from this planned additional site.
I request that the Management Plan and EIR eliminate this additional planned intrusion into the integrity of this national and state historic site.

5 I request that you deny certification for the Jackson Demonstration State Forest Management Plan Draft Dated May 17, 2002 and the Draft Environmental Impact Report for the Comprehensive Update to the Jackson Demonstration State Forest Draft Management Plan SCH #2000032002 Dated May 2002.

Yours,

Mickie & Elizabeth Zekley

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Letter MEZ-335

Response to Comment 335.1
Please refer to Response 333.1.

Response to Comment 335.2
Please refer to Response 333.2.

Response to Comment 335.3
Please refer to Response 333.3

Response to Comment 335.4
Please refer to Response 333.4

Response to Comment 335.5
Please refer to Response 333.6.

MM 338

July 17, 2002
P.O.Box 416
Littleriver, Ca 95456 re; draft Jackson Demonstration State Forest EIR

Christopher Rowney, State Forest Program, CDF&FP
P.O.Box 944246
Sacramento, CA 94244-2460

Dear Mr. Rowney:

Despite the generous time extensions, the EIR is so bulky that I didn't come close to reading all of it, so I'm really not prepared to make critical comments.

I hope you will consider my suggestions for important objectives for ongoing management of Jackson Demonstration State Forest:

1. Demonstrate **Ideal** methods of forest management, sustained yield timber harvesting, logging road construction and management.
2. Emphasize protection of streams, wildlife habitat, diversity of native plant species above maximizing board feet production - remembering that this is the people's forest, and that natural beauty, wildflowers, fish, birds and mammals are highly valued by Californians. 1
3. Logging should continue to make room for new growth and reduce risk of wild fires, but with more restrictions than in the past. If possible, stumpage should be sold to logging companies and mills owned/ operated by county residents.

4. Hiking, bicycle, and horseback riding on trails maintained for that purpose should be encouraged where and when it would not interfere with logging activities. Such users of the forest should be required to carry all of their litter out, with effective enforcement..
5. Motorized off-road recreational vehicles should be prohibited because of air pollution and possible soil surface degradation. 2
6. Camping, back-packing and picnicing should be controlled so that there are no wild fires, no substance abuse parties and no willful tearing up of wet roads. There needs to be better public education of the necessity of suc controls.

7. Permits for the commercial harvesting of mushrooms should stop. Mushroom roots are an integral part of the forest sub-soil. Continuing over-harvesting of these fungi endangers the entire forest ecology. 3

8. As a small timber owner I hope that if, as publicized, the Georgia-Pacific tree nursery in Fort Bragg is closing, that the Jackson State Forest could assume the task of growing conifer seedlings suited to our Mendocino locations. 4

9. I also hope that it will continue to do research and educatiowith more outreach and cooperation with local schools, tree farmers, groups such as the Audubon Society, California Native Plant Society, local native American tribes . . 5

I would appreciate being kept advised as to plans for Jackson State Forest.

Sincerely,

Margaret Macdonald

Margaret Macdonald

Letter MM-338

Response to Comment 338.1
The DFMP proposes a broad range of land management practices that are tailored to suit site-specific conditions that are representative of the conditions found in the region. Implementing a range of practices should help local landowners determine an ideal method for their own land.

The protection and development of streamside habitat, wildlife habitat, biodiversity and other ecosystem functions has been elevated to equal importance as timber production.

Current logging practices are substantially more restrictive than past practices; this change is reflected in the DFMP.

The timber sale program is outlined in the DFMP. Control of the purchaser is beyond the control of JDSF staff.

Response to Comment 338.2
The DEIR includes Proposed Management Measures and Specific Management Actions in regards to increases in recreation activities and facilities at JDSF (pages 408-409) that are consistent with DFMP Goal #5, “low impact recreational opportunities that are compatible with forest management objectives.”

Illegal dumping is subject to existing laws and ordinances and enforcement of those laws is beyond the scope of this EIR.

The DEIR includes a discussion of the potential impacts that ORV use may have on soil erosion (page 295). The analysis of Alternative "A" concluded unrestrained ORV use would result more noise pollution and soil erosion, than that proposed in Alternative C. ORV use is subject to existing laws and regulations.

Response to Comment 338.3
As stated on page 164 of the DEIR “Mushroom collection permits may be purchased for both personal use and commercial collection. Collection volume is limited, although areas of collection are not constrained.” Additionally, JDSF represents the most significant public land available for mushroom collection in this area (DEIR, page 164). Due to the fact that mushroom collection is prohibited in State Parks, which border JDSF to the west and southwest, it reasonable to assume that mushroom populations will remain intact while providing and an additional recreation opportunity for the public to enjoy on JDSF.

As a component of the adaptive management element of the Plan, mushroom harvesting may be revised to incorporate changes in policies and priorities (DEIR, page 49).

Response to Comment 338.4
CDF has not proposed operating a tree nursery in Mendocino County. Such a proposal is beyond the scope of this EIR.

Response to Comment 338.5
Please refer to Response 201.7.

JL 349

Andrea Tuttle, Director
c/o Christopher Rowney
California Dept. of Forestry & Fire Protection
P.O. Box 944246
Sacramento, CA 94244

July 15, 2002

Re: Comments on Jackson State Forest Management Plan

1 **1. Clearcut logging**: Potential environmental impacts to Jackson State Forest and cumulative watershed impacts are not adequately addressed in this Management Plan. Clearcut logging (including variable retention, and small patch clearcuts) is known to have profound negative impact on the biodiversity of the natural landscape and this warning was reiterated in a report by the Forest and Rangeland Resources Assessment Program fifteen years ago within your own department (Calif. Dept of Forestry and Fire Protection 1988). Current clearcut practices cause local area fragmentation of natural vegetation and contribute to broad-scale fragmentation across a region. There are significant adverse environmental effects after any form of clearcut, including drying out of soil, erosion, sediment overload in streams, especially in Class II and III streams. **Option:** Use selection logging as the principle logging system in the timber harvest program.

2 **2. Use Jackson State Forest to demonstrate high quality ecosystem management.** Let local private landowners be the primary timber harvesters. Change the focus of JDSF to reflect its name by providing, for instance, training in fire management, or revegetation projects, or land corridor development between old growth areas.

3 **3. Environmental Impacts – Herbicide Use:** Require that THP submitters document intended herbicide use on JDSF prior to plan approval. By deferring herbicide application to a later date, the project is segmented into two pieces, which is not lawful under CEQA, because the cumulative impacts of the two parts cannot adequately be considered.

4 4. **Take into account (and develop a method of tallying) recreational use of the forest.** JDSF is one few public forests on the north coast south of Humboldt County. Tourism is growing in importance in the economy of the area. An accurate count is not available of the number of visitors that use the forest but do not use the campground (and are thus not tallied). Groups such as the California Lichen Society, California Native Plant Society (with local and out of area members), and College of the Redwoods courses take field trips to sites within JSDF. Visitors contribute to the local economy by eating at local restaurants and by staying at local inns.

Thank you for taking time to review this letter.

Sincerely,

JUL 22 2002

Julia Larke
P.O. Box 1631
Ft. Bragg, CA 95437

Letter JL-349

Response to Comment 349.1
Please refer to General Response 9 for cumulative impacts information. Please Refer to General Response 8 for even-age management and clear cutting information.

Response to Comment 349.2
Recommendations made by the commenter are beyond the scope of this EIR. Please refer to Response 201.7 for further details regarding demonstration projects.

Response to Comment 349.3
Please refer to General Response 9, Cumulative Impacts Summary, Cumulative Impacts of Pesticide Use. (p II-16).

Response to Comment 349.4
As stated on page 350 of the DEIR, CDF estimates the annual visitor day-use population of JDSF to be 50,000.

HB-351

Hans J. Burkhardt
One Emile's Station
Fort Bragg, CA 95437

July 17, 2002

California Department of Forestry and Fire Protection
Mark Hite, Special Assistant to the Director
P.O. Box 944246
Sacramento CA, 94244- 2460

Re: Draft Environmental Impact Report for the Jackson Demonstration State Forest Management Plan

Dear Mr. Hite:

1 Of the five options considered for the Draft EIR, **Option D is the only one I support:** Option D puts JDSF's 50,000 acres under all age management just as it was managed for many decades until about 15 years ago. **However, instead of harvesting 20 million board feet (20 mmbf) each year, "Percent of Inventory (POI) harvesting control" of 1% should be used,** which allows a constant increase of yearly cut, inventory, timber quality, forest related permanent employment, productive capacity and biological health of the forest.

2 Using the Harvest II modeling approach*, annual harvests would begin at 20 mmbf - as anticipated in Option D – but would increase to 22 mmbf in the first 10 years, to 23.4 during the second decade and reach 33.4 mmbf when the forest inventory is fully regulated (growth and harvests are equal**), and inventory will be steady at about 68,000 bf per acre as long as POI of 1% is used as harvest control. The all-age, POI-One managed forest will have trees from the seedling stage to 200 year old trees. This would indeed optimize the intended use as demonstration forest and should also be an acceptable compromise to those who want no cut (Option A) because it will result in a forest of near old-growth characteristics.

I do not support any of the other options for the following reasons:

Option A: Jackson State is not a park or a preserve, it is a demonstration forest.
Option B: I prefer all-age-management **without clearcutting.**
Option C: Allows clearcutting on 29% of JDSF's acreage. **(Clearcutting and its devastating consequences have been demonstrated more than enough. ***)**
Option E: is all-age management as D, but allows only a cut of 10 mmbf/year.

* A Prescription that makes Environmental Protection and Optimum Perpetual Revenue Flow compatible: H. Burkhardt, International Journal of Ecoforestry Vol.12 No.1, 1996. Please see enclosed copy, pages 5 & 6.

** Page 5, footnote 2, of above cited publication.

*** Maximizing Forest Productivity, by Hans J. Burkhardt. Pages 25,26,29,30 and 31.

I hope you will seriously consider my suggestions.

Sincerely,

Hans J. Burkhardt

Hans J. Burkhardt

RECEIVED
JUL 23 2002

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~~JUL 3 2 2002~~

Letter HB-351

Response to Comments 351.1 and 351.2
Please refer to General Responses 1 and 2. The desired future condition of JDSF is well stated in the DFMP. The DFMP also outlines the management practices that will be used to reach the desired future condition. The comment presents a basic disagreement with both the desired future conditions and proposed management practices. However, no information is presented that indicates the DFMP will result in a negative impact or the DEIR failed to disclose a potential impact.

The comment indicates that a different alternative based on percent of inventory (POI) harvest control should have been analyzed. The DEIR assessed the harvest level proposed in the DFMP and found that the proposed harvest level is in conformance with the FPRs MSP requirements. The POI harvesting control method discussed in the comment is one of many methods that can be used to determine an allowable cut and control harvest levels to produce a "regulated" forest. In forest management terms, a regulated forest has age and size classes distributed in such proportions and growing at such rates that an approximately equal annual or periodic yield of products of a desired size and quality may be obtained. Forest regulation is at the heart of sustained yield management. Forest management textbooks devote considerable coverage to methods of regulating a forest and methods of determining allowable harvest levels within sustained yield principles.

There is no "best" allowable cut level or harvesting control method that can be applied to all ownership's to create a regulated forest. Most methods fall into either area control or volume control, however methods that combine both area and volume control are possible. The POI method appears to be a variation of a volume control method where inventory is used as a surrogate for growth. Differences in desired future condition, fluctuation in markets, silviculture needs, and degree of harvest activity desired, will all affect the allowable cut and control of harvest levels. The allowable cut estimate in the DFMP is based on the JDSF Option A document, which is based on achieving the desired future condition of JDSF and considers constraints that would limit harvest. The Option "A" document is based on a volume control method, where the allowable cut is based on a percentage of periodic growth.

RB-357

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SPECIALIZING IN REDWOOD AND DOUGLAS FIR
DIPTEROCARPACEAE AND TEAK

RUDOLF W. BECKING
RESEARCH CONSULTANT
PH.D. FOREST MANAGEMENT
CALIFORNIA RPF# 0294

FOREST MENSURATION
REMOTE SENSING
ENVIRONMENTAL IMPACT
TROPICAL FORESTRY
ALL-AGED FORESTRY

RECEIVED BY
Director's Office
JUL 22 2002
Department of Forestry and Fire Protection

July 15, 2002

Mr. Mark Jameson, State Forest Manager
Jackson Demonstration State Forest802 North Main Street
P. O. Box 1185
Fort Bragg, CA. 94244-2461

REF: Comments of DRAFT May 17, 2002

Dear Mark:

Please find attached Comments submitted by e-mail to be sure it will be received by the deadline. A hard copy will be mailed by snail-US Mail.

In perusing the JDSF DRAFT May 17, 2002 and its Appendices I congratulate the CDF to engage competent EIS/EIR consultants and forest managers for the DRAFT. The thorough coverage is often repetitive, wordy and confusing to laypersons due to ubiquitous use of acronyms and its general complex organization. I add a few comments of critique, important omissions as well as suggestions for improvement. For convenience of proper response I numbered these. However, the order of numbering does not reflect its relative importance to the completeness or validity of this DRAFT 2002 text or its conclusions.

1 (1) The sections on Legislation, Policy and Regulations could be considerably trimmed in eliminating references to other State Forests, focusing primarily upon JDSF. It is often not clear what is the latest policy or enforcement. Change will be a continuing process with policies and regulations. Shrinking budgets and falling lumber prices will become daily challenges. It should be made clear what the consequences are upon current and/or future management options and harvest levels. This may lead to irretrievable resources losses.

2 (2) There is considerable bias exhibited in this DRAFT 2002 against Plenterung and 2POI and in ignoring other well-validated forest management approaches and silvicultural systems. All these proclaimed goals towards "highest (?maximum) growth possible by approximating the anticipated culmination of biological growth", "inventory to build up over time", "significant contribution to the local economy" , "large patches of late-seral habitat" and "preserve old-growth groves and trees" lack documentation and exact quantification. Most critical is the fact that there are no established safety margins of timber harvest in case weather and watershed conditions change and these lofty goals fail.

3 (3) What past actual repetitive cruises do exist that warrant success of the promoted forest management activities? Publish these data for public scrutiny and verification in Appendix V including numbered CFI plot locations. Table A5-1 headings are incorrect,

lacking acronym explanations, definition of site class and erroneous Vol. (bf/acre) values. This table needs drastic revision including source information.

4 (4) If the legal mandate insists on highest and maximum productivity of timber crops of high quality timber, this goes at the expense of other natural resources. Define in quantitative terms what stand structure (N/acre, BA/acre m^2/ha, Vol/m^3 , Vol. cu.ft/acre and Vol. MBF/acre. The Scribner or other board foot log rules are commercially obsolete. Board-foot volume tables yield only MBF value for trees over 11 inches DBH. This precludes including information of young regeneration, smaller trees, mortality and ingrowth. If the enabling legislation is to be interpreted to yield maximum productivity of high quality timber with due consideration wildlife, recreation and aesthetics, it would evolve to "optimal" or "balanced" sustainable productivity of these natural resources. Quantify maximum productivity per treatment areas. Publish the recent and the past 10-year periodic CFI plot inventories available for the three treatment areas (light-selection, high-selection, group selection, control).

5 (5) Does the computation of individual tree volume use the expected or computerized tree height for the measured DBH or is the tree height measured directly from the tree? It is important to use the identical tree volume table for each periodic inventory. Is the individual tree volume for DBH and height identical for each inventory? What happens when no tree heights are measured at the time of inventory? The 3-plot cluster three-circular nested plot inventories create distinct biases towards the larger DBH classes in terms of MBF. Plot locations are important in terms of stratified timber types. Map this timber type stratification on the CFI plot map. It should be noted that existing and recognized timber types are managed according to the three management levels.

6 (6) What happened to the proposed Plenterung forest management system and the proposed 2POI proposal well publicized locally in Mendocino County. None of the Plenterung or 2POI information is included in the Literature listing. Neither is the existence of the Becking Pocket Flora of the Redwoods' This distinct bias is unacceptable to CEQA standards in exploring and discussion of alternatives.

7 (7) The Caspar Thinning Trials are summarized in the California Forestry Note #99, June 1988. These thinning trials were jointly established in 1960-1961 by Becking (HSU), Muelder (UC Berkeley) and the local CDF staff to study the effects of clearcut, light selection, heavy selection, group selection and control in second-growth stands. These plots were 100% inventoried after they had been treated lacking pre-treatment inventories. The chosen DBH limit was 11.0 inches and all trees were measured 100% over the treatment area. Between 1960 - 1979, some 19 inventories are available between 1979 -1984. In 1974. a set of supplemental random plots yielded some 5 inventories until 1984.

8 (8) The 2POI method of limiting the timber harvest has proven to increase timber volumes over time. It accomplishes well the desired goals towards sustainable management of the late-seral stage of the forest types. This 2POI is the natural growth rate of a fully-stocked natural mixed redwood stand inclusive natural mortality. It provides for the least risk of losing the natural growth potential of the site and the timber stand. The 2POI was discovered to be the rate embedded as timber volume increase of a wide range of other normal yield tables. Any increase of initial timber removal above the 2POI level has long-lasting negative effects. In the Caspar Thinning Trials the greatest timber volume increases occur in Group Selection and the Control Areas as

compared to Light Selection Cut and to Heavy Selection Cut. Why not uniformly adopt this conservative 2POI cut for initial entry within the immediate future management?

9 (9) The Caspar Thinning Trials are not the conclusive answer to thinning in that the initial cut was executed at the start of this experimental timber removal without a pre-harvest inventory. Subsequently, it was originally planned for the Group Selection blocks to be re-inventoried after 7 years. This would be followed by repeated cuts every 7 years. would then be planned. After the initial cut there have been no subsequent timber harvest till 1988 when all the thinning plots were liquidated by the CDF-approved THP. This concepts seems to persist in the other planned thinning trials where the planned timber harvest frequency is 10 to 25 years for group selection. Even-aged management is been planned for 90 to 120 year rotations. It will be almost impossible to environmentally assess the harvest effects of the initial cut. The answer of its success or failure would not be forthcoming until the rotation ends. What is the research justification of the desired goals for such long rotations?

10 (10) The 5-year short-term Harvest Schedule encompasses about 6291 acres of about the 48,652 available acreage for timber harvest outside WLPZ and other restriction areas. This represents 13% of the available management area to be treated within the next 5 years. The needed timber harvest annually is projected at 29-31 MMBF/year. The projected constrained rolling timber harvest is estimated to be 43 MMBF at the end of a 120-year planning period. What is not clear in these projections is what percentage constitutes hardwood or conifer? What are the relative proportions in redwood, Douglas fir, other conifers, alder, tanoak and other non-merchantable tree species or logs. In other words, what percentage of the required 29-31 MMBF/year would be conifer demanding the bid price of $500/MMBF for redwood, about $170-200/MMBF for Douglas fir and possibly grand fir or pines of 3M log quality? What is the cull percentage? What is the logging waste? Considering the "normal" appearance of cable logging sites, especially high-lead, logging waste can amount to some 15-35% of the harvested timber volume, depending how branched and crooked logs are and how rot affected log quality. In order to obtain saleable logs at the $500/MMBF quality and considerable higher timber volumes have to be harvested with subsequent slash disposal and increasing logging costs. Clarification is needed especially for the hardwood dominated areas. What is the price and composition of the timber harvest is in terms revenues for these mixed stands.

11 (11) Is winter logging considered or is winter logging banned from April 15 to the first soaking rain in October? The environmental impacts did not address this question.

12 (12) Is helicopter logging considered? When and where would it occur? What are its impacts upon human residences and wildlife? Is it economically justified per CDF's mandate of economic logging?

13 (13) In comparing Table 6 of forest structure conditions and Table 5 the 5-year Short-Term Harvest Schedule indicate the availability of 6291 acres for harvest. Some 3363 acres are in selection or group selection. About 20% is in group openings or about 168 acres in even-aged management. This brings even-aged management to 2928 acres + 168 acres in openings to 3096 acres. This for the next 5 years hardly a trend to phase out even-aged management by clear cuts. Subsequent edge effects from clearcuts would further increase the clearcut affected acreage.

38

14 (14) The original legislative mandate is to manage the forest resources for maximum timber production methods for the benefit of the general public, small forest landowners, resource professionals, timber operators, and the timber industry. The proposed DRAFT 2002 harvests seem to be more designed to favor the opposite, i.e. the large timber owners instead of the small timber owners. Cable logging and helicopter logging require substantial timber removal because of its elevated operating expense. How can this be re-oriented towards the small timber owners at the landscape level. The costs of preparation of a NTMP is formidable to small land owner. Plenterung may be considered since it is not prohibitively expensive.

15 (15) Nowhere planting redwoods or Douglas fir upon clearcut harvest is mentioned. Cost estimates and success rates of artificial planting and re-planting would be desirable. This should be addressed in the DRAFT.

Respectfully yours,

Dr. Rudolf W. Becking
Concerned Citizen

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Letter RB-357

Response to Comment 357.1
There is information on legislation, policy, and regulations throughout the DEIR; your comment does not cite a particular reference we may correct or explain. In general, some of the information pertains to JDSF alone and some to the entire State Forest system, JDSF included. The most recent information was used throughout the DEIR, but regulations do change. It is, of course, the policy of CDF to remain in compliance with all applicable local, State, and federal regulations as they change.

The DFMP additionally calls for adaptive management in order to remain current through changing economic conditions, regulatory environment, and forest health.

Response to Comment 357.2
Please refer to Responses HB-351.1 and 351.2.

Response to Comment 357.3
Please refer to DEIR appendix 8A for additional discussion on JDSF inventory and a discussion of the source of the information for Table A5-1 in the DEIR. Also refer to response VT-241.1 and 2 for additional information regarding the availability of the inventory information.

Response to Comment 357.4
Please refer to General Response 2 and Response VT-241.1.

Response to Comment 357.5
Please refer to General Response 2. Also, please refer to Responses VT-241.6 and VT-241.15 for additional information. JDSF has used currently accepted inventory methodologies conducted under the supervision of an RPF.

Response to Comment 357.6
Please refer to General Response 2 and HB-351.1 and 2.

Response to Comment 357.7
A summary of the Caspar Thinning Trials is provided in Appendix 8 of the DEIR.

Response to Comment 357.8
The DFMP proposes a allowable cut of 31 to 33 MMBF per year with a initial conifer inventory of approximately 2,000 MMBF. This represents a 1.65 POI harvest level. This is a more conservative approach than the 2 POI suggested in the comment.

Response to Comment 357.9
The rotation ages presented in the DFMP range from 60 to 150 years depending on location and site quality. The reasoning for the range of rotation ages is included in the DFMP. Environmental impacts of timber harvesting are thoroughly discussed in the DEIR. Long term impacts relating to growth and yield are also addressed in the DEIR and the JDSF Option A document.

Response to Comment 357.10
Please refer to General Response 2 and Response VT-241.1. The level of detail presented in the DEIR is appropriate for a Program EIR completed for a land management plan such as the DFMP. The information requested would be more appropriate at the scale of a THP or other project specific environmental review document.

Response to Comments 357.11
Please see DFMP page 74 for wet weather restrictions. Additional protection measures are listed on DFMP pages 75,76, and 77. Environmental impacts of the DFMP considered these protections.

Response to Comments 357.12
Helicopter logging is proposed in the DFMP and analyzed in the DEIR. Please refer to documents for impacts of use.

Response to Comment 357.13
The comment is in error. Table 5 of the DFMP indicates that approximately 677 acres are panned for even-aged regeneration management. This is an average of about 135 acres per year. Group openings in the uneven-aged management areas should not be included in this calculation. This level of regeneration harvesting will move the Forest toward the stated desired future condition.

Response to Comment 357.14
Please refer to General Response 2. The DFMP presents a balanced approach that will provide JDSF the opportunity to demonstrate a wide array of silviculture and harvesting methods to the public. Many small to medium landowners effectively use cable and helicopter logging systems to harvest moderate timber volumes. This is largely a decision to be made by a landowners in consideration of economics and the desired future condition of the ownership. The high cost of preparing THPs and NTMPs for small landowners is not directly linked to the land management philosophy underlying the documents, but the level of effort required to complete the field work and office work required by the FPRs and other reviewing agencies.

Response to Comment 357.15
Pages 161 to 163 of the DEIR provide a discussion of stand improvement practices that are used or have the potential for use on the Forest, including tree planting. Cost estimates for tree planting are beyond the scope of this EIR. The DEIR indicates the most common and effective tree planting strategy used in the redwood region.

F2-CS-360

Caroline Schooley
Box 117 , Caspar, CA 95420

July 12, 2002

Chris Rowney
1416 19th Street
Sacramento, CA 94244

Subject: Management Plan and EIR for Jackson State Forest

Dear Chris Rowney:

Please provide me your response to the following:

To: Chris Rowney, California Dept. of Forestry; Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

You have received many letters, citing well-documented ecological reasons, urging you to not permit further timber harvest in Jackson Demonstration State Forest until an up-to-date Environmental Impact Report and forest management plan are in place, . I have read several of them and am in complete agreement. Rather than repeat those comments, I would like to make a case based on state and regional economics.

All state agencies are under budget restriction this year, and that may continue in the near future. The California Division of Forestry is no exception; to them, JDSF is an always-tempting ¿money tree¿ that subsidizes their statewide budget. Their stake is in their statewide operations more than in the economic health of the region that surrounds JDSF.

The economy of our region has crashed this year, for ecological reasons disturbingly similar to those that will be produced by continued revenue-driven timbering in JDSF. Our nearshore fishery has been severely restricted because many years of overharvesting with the marine equivalent of ¿clearcut¿ methods have brought the marine ecology close to the point of no recovery. Our absentee-owned lumber mills (most recently, Georgia Pacific, Fort Bragg) will close because overharvesting has cut the exportable profit margin.

Our region is left with tourism as its major industry, and if it isn¿t kept viable the state will face an unemployment-related fiscal drain much larger than the return from timber sales from JDSF. Yet the current management of the forest ignores its recreational potential! Tourism needs more than more motels; it requires things for visitors to DO. That doesn¿t mean no logging at all; this year¿s terrible wildfires have shown that forest management must be an active process. We need a management plan that will use selective, limited timber harvest as a tool to reconstruct a healthy forest, not as an easy way to make a profit. We need a balanced plan, that will agressively enhance the attractiveness of the region as a recreational destination. Such an

approach won¿t produce short-term profit for the CDF operating budget, but it will have a long-term positive effect on the regional economy.

2 Please do everything that you can to change the ¿Demonstration¿ component of JDSF from a 20th century demonstration of logging methods to a 21st century demonstration of responsible management of a regional environment. THAT is the kind of environmental impact that we need.

Sincerely,

Caroline Schooley

Letter CS-360

Response to Comment 360.1
Please refer to Response 331.7

Response to Comment 360.2
Please refer to General Response 1.

EZ-CD-361

catherine day
Fashion Island Blvd., San Mateo, CA 94404

July 12, 2002

Chris Rowney
1416 19th Street
Sacramento, CA 94244

Subject: Management Plan and EIR for Jackson State Forest

Dear Chris Rowney:

Please provide me your response to the following:

To: Chris Rowney, California Dept. of Forestry; Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

Please, please, in the face of an ever-growing and over-populated world, think about the future of our land, our children and the precious few resources still left for us all to enjoy. Where did you grow up? What did you like to do? Were there places that you found precious that created memories like the Jackson State Forest is for so many California residents and visitors worldwide?

1 I strongly oppose the Draft Management Plan for Jackson State Forest. I oppose the plan's clearcutting, large-scale commercial logging, cutting of the oldest second-growth stands, inadequate stream protection, herbicide use, and lack of a plan to expand recreation. I personally want Jackson State restored to an old growth redwood forest for habitat, recreation, education and research.

2 With respect to the EIR treatment of harvest operations in the Woodlands Special Treatment area, informed decisionmaking and public participation are impossible because the plans are not described in meaningful detail and there is no consideration given to the recreational and wildlife benefits of undisturbed forest. Moreover, the original deed transfer of this land precludes any timber operations that don't contribute to recreation, park, or conservation use. The Railroad Gulch plan clearly violates this clause.

Sincerely,
catherine day

Letter CD-361

Response to Comment 361.1
Please refer to General Response 1.

Response to Comment 361.2
The DEIR does provide for consideration to potential recreational and wildlife benefits of undisturbed forest in the analysis of Alternative "A." Recreational use, as a primary management emphasis was an alternative considered but dismissed from further action as contained on page 59 of the DEIR. The JDSF DFMP provides special consideration given to the Woodlands Special Treatment Area, which is identified as a Special Concern Area. On page 149, it is provided that within the Woodlands Special Treatment Area "silvicultural activities are focused on promoting late-successional forest conditions, maintaining aesthetic qualities, and limiting impacts on the operation of Mendocino Woodlands." Also, please refer to General Response 6.

EF-363

Eugene Fortain
5707 Los Alamos Ct., Santa Rosa, CA 95409

July 11, 2002

Chris Rowney
1416 19th Street
Sacramento, CA 94244

Subject: Management Plan and EIR for Jackson State Forest

Dear Chris Rowney:

Please provide me your response to the following:

To: Chris Rowney, California Dept. of Forestry; Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

1 I strongly oppose the state of California's control of renewable resources. The experience of the horrific forest fires in the last few years is more than enough evidence that the state is not doing an adequate job of protecting our resources. This land should be put up for auction so that the private sector can properly manage it and protect it from fires.

Sincerely,

Eugene Fortain

Letter EF-363

Response to Comment 363.1
Please refer to General Response 1.

'N 364

Jesse Noell
1310 Sixth Street , Eureka, CA 95501

July 10, 2002

Chris Rowney
1416 19th Street
Sacramento, CA 94244

Subject: Management Plan and EIR for Jackson State Forest

Dear Chris Rowney:

Please provide me your response to the following:

To: Chris Rowney, California Dept. of Forestry; Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

1 I oppose the Draft Management plan's clearcutting, large-scale commercial logging, cutting of the oldest second-growth stands, inadequate stream protection, herbicide use, and lack of a plan to expand recreation. I personally want Jackson State restored to an old growth redwood forest for habitat, recreation, education and research.

2 The Draft EIR fails to evaluate the restoration alternative. The closest alternative, Alternative E, does not restrict timber operations to those needed to restore the forest to old growth, to enhance recreation opportunities or to improve wildlife and botanical habitats. It does not include significant expansion of recreation, nor direct that proceeds from timber harvests be spent within Jackson State. The EIR does not present data on the cumulative impacts of past and proposed logging operations. The EIR does not incorporate important scientific findings of research conducted by the Redwood Sciences Laboratory. Its stream protection measures are not justified scientifically. Clearcutting decreases rainfall interception losses (by as much as 17% in a 3 inch rainfall in a 24 hour event) back into the atmosphere during intense storms including storm conditions when the soils are at maximum wetness. No mitigations are proposed to mitigate the effect of canopy removal. This hydrolic change effect dramatically reduces the factor of hillslope safety or stability. The plan does not evaluate the portions of the forest that are at risk for hillslope failure using deterministic methods and mitigate for this significant adverse impact. Clearcutting increases peak flow runoff, which increases gully extension rates, bank failure rates and increases to the frequency and magnitude of hydrolic pore pressure waves with the potential to trigger mass wasting events. Its rate of cut does not evaluate the loss of soil metals- an unevaluated cumulative effect on the sustainability of the forest productivity. No feasable, less damaging alternatives that could mitigate the loss of soil metals have been considered by the

plan. It does not recognize the critical habitat contribution that Jackson State could make to the recovery of the Marbled Murrelet. For all of the above reasons, the Draft EIR fails to provide me with the information and analysis I need to be able to judge the merits of the Draft Management Plan.

Sincerely,

Jesse Noell

Letter JN-364

Response to Comment 364.1
Please refer to General Response 1.

Response to Comment 364.2
The DEIR provides for evaluation of restoration within Alternative E, where on page 62 it is stated "Restoration of the natural forest ecosystem and the protection of water quality, fish, and wildlife habitats at JDSF would be the primary management goals. There would be no even-aged management or harvest of old-growth trees. Timber harvesting, when it occurred, would be designed to advance timber stand development to late seral characteristics. Low impact recreational opportunities such as trails and hike-in campsites would be expanded where they did not pose significant risk to fish and wildlife resources. Research would no longer address questions on active forest management, but would shift to studying the existing vegetation types and watercourse conditions and how they change over time. A research, demonstration, and monitoring program would be implemented to gain and distribute knowledge on the restoration of old-growth and late-seral forests, natural watersheds, and associated resources." Also, please refer to General Response 1.

Response to Comment 364.3
Please refer to General Response 4.

Response to Comment 364.4A
Issue: The DEIR does not incorporate important scientific findings of research conducted by the Redwood Sciences Laboratory.

Response: Important scientific findings of research conducted by the Redwood Sciences Laboratory is found in numerous locations in the DEIR, including the following sections: Biological Resources (V-star, suspended sediment, mass wasting, and LWD); Hydrology and Water Quality (peak flows, water yield and low flows, and sediment), Appendix 8C—Aquatic Resources (V-star, LWD recruitment, LWD loading, channel changes associated with NF Caspar Creek logging), and Appendix 11—Hydrology and Water Resources Report (changes in peak flows).

Response to Comment 364.4B

Issue: The proposed stream protection measures are not justified scientifically.

Response: Recent research conducted by leading scientists support the protection measures proposed for riparian areas within JDSF. For example, Benda et al. (in press) reported that in the absence of landsliding, wood recruitment in both old growth and second-growth Humboldt County study sites originated from within 20 to 40 m of the stream. Reid and Hilton (1998) reported that about 90% of the instances of debris input occurred from tree falls within 115 feet

(35 m) of the channel in un-reentered second growth redwood/Douglas-fir forests in the North Fork of Caspar Creek.
Other work supports the contention that most LWD is recruited from within 20 m to 40 m of the channel bank. For example, McDade et al. (1990) found that approximately 80% of in-channel large woody debris pieces associated with 80+-year-old conifer stands (primarily Douglas-fir) in western Washington and Oregon originated within 20 m (66 feet) of the streambank. In a comprehensive review of LWD literature, Lassettre and Harris (2001) state: "To ensure future supplies of LWD to stream channels, buffer strips serving as reservoirs of wood supply should be wide enough to encompass the zone of LWD input, typically within 20 m to 30 m of the stream channel (Lienkaemper and Swanson 1987, McDade et al. 1990, Van Sickle and Gregory 1990)"… "The use of a selectively logged fringe buffer adjacent to the streamside buffer may serve to reduce abnormally high rates of windthrow and preserve natural input rates. Any selective cutting within buffer strips should leave an abundant supply of the largest trees for recruitment (Murphy and Koski 1989, Abbe and Montgomery 1996).

To address LWD recruitment, page 119 of the DEIR document states that if instream wood loading does not meet target criteria as described in Bilby and Ward (1989), Class I WLPZ silviculture will either be no-cut (except for cable corridor trees where needed) within 100 to 150 feet (30 m to 45 m) of the watercourse transition line, or limited to thinning from below to promote growth on the larger diameter trees and improve LWD recruitment potential. WLPZ prescriptions shall default to either no-cut within 100 to 150 feet (30 to 45 m) of the watercourse transition line or limited to thinning from below silviculture if the recommended LWD surveys are not conducted.

The other area of concern in riparian zones relates to shading for water temperature concerns. Murphy (1995) and Beschta et al. (1987) state that in general, buffer strips that are 30 m (approximately 100 feet) wide provide nearly the same shade as in old-growth forest (old-growth canopy density is displayed as varying from 80 to 90% in Murphy (1995)). Site-specific conditions that influence shade effectiveness include density and height of vegetation, stream width, stream reach orientation, latitude, and sun angle (CH_2MHill and Western Watershed Analysts 1999). The JDSF Management Plan and DEIR propose 150 foot (45 m) WLPZs for Class I watercourses with at least 85% canopy post-harvest for the first 75 feet, and 65% in the second 75 feet. The implementation of these measures is expected to result in no measurable detection of shading (i.e., blockage of incoming solar radiation) reduction, and water temperature increases are not anticipated.

Response to Comment 364.4C
Issue: No mitigations are proposed to mitigate the effect of canopy removal, which decreases interception loss by approximately 20% for winter storm events.

Response: Research conducted in the North Fork of Caspar Creek has shown that clear cutting reduces interception loss approximately 20% for large winter storm events (Lewis et al. 2001). This reduction in interception loss is largely responsible for increased peak flows in clear cut-harvested watersheds under mid-winter saturated mantel conditions. Small peak flow increases are possible in moderately sized basins (e.g., 1000 ac) where large percentages of the

basin are clearcut (e.g., NF Caspar Creek—9% increase for 2 yr recurrence interval discharge event with almost half the basin clearcut in 3 years). However, use of the California Forest Practice Rules limits clearcut size and the rate that larger watersheds can be harvested with even-aged silvicultural systems. In large watersheds, harvesting is spread over decades, within which time the earliest clearcut areas will have regenerated (in Caspar Creek, peak flow increases in clearcut tributary basins recovered in 11 years, J. Lewis, USFS-PSW, Arcata, CA, personal communication). Small increases in peak flows such as observed in Caspar Creek did not appear to substantially modify the channel morphology present and were described as relatively benign (Ziemer 1998).

Response to Comment 364.4D
Issue: Increased peak runoff, mainly related to reduction in interception loss and changes in evapotranspiration during the winter period, dramatically reduces the factor of safety related to hillslope stability.

Response: Increased peak flows in the North Fork of Caspar Creek have not increased the frequency of landsliding (Cafferata and Spittler 1998, Ziemer 1998). In the North Fork, the number and size of landslides were similar in clear cut-logged units and unlogged units (Cafferata and Spittler 1998).

Response to Comment 364.4E
Issue: The JDSF Management Plan does not evaluate the portions of the Forest that are at risk for hillslope failure using deterministic methods and mitigate for this significant adverse impact.

Response: In Section 7, Geology and Soils, page 291, the DEIR states that shallow landslide potential with JDSF has been modeled with a distributive computer model (SHALSTAB) based on digital elevation data, drainage area, and slope. This data was used in the development of the California Geological Survey preliminary map of relative landslide potential for JDSF. Also in Section 7, page 299, the DEIR states that CGS's Short and Spittler (2002) have compiled a new landslide map for JDSF. This recently produced map supplements previous maps produced by CGS, and includes recent field mapping and additional aerial photo interpretation, as well as additional map sources. Pages 301 to 304 describe the three main approaches that will be employed to reduce erosion and sedimentation—particularly related to mass wasting—as part of the JDSF Management Plan. These include: 1) designation of special concern areas, including inner gorge slopes and shallow landslide potential areas, 2) a detailed methodology for assessment of slope stability for use in THP preparation—including office review of existing information, field review, and CEG input, and 3) use of a Road Management Plan, which includes an inventory of JDSF roads and crossings.

Response to Comment 364.4F
Issue: Clear cutting increases peak runoff, which increases gully extension rates, bank failure rates, and increases the frequency and magnitude of hydrologic pore pressures, with the potential to trigger mass wasting events.

Response: Humboldt State University Masters degree candidate Nick Dewey is currently conducting a channel incision study in the North and South Forks of Caspar Creek. Mr. Dewey has observed gullying and channel incision in all types of channels—including the control or reference tributaries in the North Fork. He has reported that there is more evidence of recent channel incision in the South Fork, which was selectively logged prior to the implementation of the modern Forest Practice Rules (1971 to1973), than in the North Fork, which was nearly 50% clearcut from 1985 to 1991. Mr. Dewey has observed connectivity between old roads and channels in the South Fork. Other causes include sapping, old debris flow tracks, and soil pipe collapse. Therefore, gully extension and channel incision appear to be related to roads, old logging practices no longer in use, and hillslope processes, and relatively unrelated to the type of silvicultural system utilized. As stated above under item No. 4., Cafferata and Spittler (1998) reported that the number and size of landslides were similar in clear cut-logged units and unlogged units in the North Fork of Caspar Creek.

Response to Comment 364.4G
Issue: Given the rate of harvest proposed in the JDSF Management Plan and DEIR, there is no evaluation of the loss of soil metals, an unevaluated cumulative effect on the sustainability of the forest productivity. No feasible, less damaging alternatives that could mitigate the loss of soil metals have been considered by the Plan.

Response: It appears likely that Mr. Noell is actually referring to the potential loss of soil nutrients, such as nitrogen, when he states “soil metals,” since soil nutrients are what are related to long-term soil and forest productivity and sustainability. Timber harvesting has the potential to affect nutrient cycling. The DEIR discusses the effects of harvesting on nutrients in Appendix 8C. Dahlgren (1998) studied the effects of forest harvesting on nitrogen cycling in the Caspar Creek watershed. He reported that in contrast to other forest ecosystems that show large nutrient losses in stream water after harvest, this Douglas fir/redwood ecosystem shows relatively small losses. Dahlgren (1998) concluded, ”Clearcut harvesting in this Douglas fir/redwood ecosystem did not result in any short-term detectable decrease in soil carbon and nitrogen pools. Stream-water nitrate concentrations were increased after clear cutting, especially during storm events with high stream discharge volumes; however, fluxes in stream water were relatively low compared to results from other forest ecosystems. Immobilization of nutrients by the rapid regrowth of redwood stump sprouts appears to make this ecosystem relatively resistant to nutrient loss by leaching after harvest. The elevated nitrate concentration in streams draining clearcut watersheds was substantially decreased at downstream sampling points. By the time the stream left the experimental watershed, nitrate concentrations were near those of the nonperturbed reference watersheds. Removal of nitrogen in the harvested biomass results in an appreciable loss of nitrogen from the forest ecosystem. These data suggest that nitrogen fixation by ***Ceanothus*** may be an important nitrogen input that is necessary to maintain the long-term productivity and sustainability of these ecosystems."

Response to Comment 364.5
Please refer to General Response 5.

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EM 366

Ewout Mante
1295 Wilson St , Palo Alto, CA 94301

July 8, 2002

Chris Rowney
1416 19th Street
Sacramento, CA 94244

Subject: Management Plan and EIR for Jackson State Forest

Dear Chris Rowney:

Please provide me your response to the following:

To: Chris Rowney, California Dept. of Forestry; Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

It is with regret that I learn about the new forestry plan. I am an ex-boy scout who has graduated to a mini-van driving dad. I have a young family and we all take great pleasure in outdoor activities. These range from canoeing in Monterey Bay, cycling in Alexander valley, and yes, hiking the old growth forests. During these visits, we contribute significant amounts to the local economy.

The point I am trying to make is that whilst primary industries such as logging have a role to play in our economy, the real growth comes from eco-tourism. Although the ecology movement may have started as an alternative/left wing movement, these days eco-tourism has become mainstream. Countries like Costa Rica have 'mined' this new seam of income with great effect. I would urge you to do the same.

I realise your task is difficult. However please take a long term perspective when thinking about how to balance traditional logging interests with pressure form - main stream - nature enthousiasts. 1

Sincerely,

Ewout Mante

Letter EM-366

Response to Comment 366.1
Please refer to General Response 1.

LP-367

Lois Postel
642 E. Malibu Dr. , Tempe, AZ 85282-5308

July 10, 2002

Chris Rowney
1416 19th Street
Sacramento, CA 94244

Subject: Management Plan and EIR for Jackson State Forest

Dear Chris Rowney:

Please provide me your response to the following:

To: Chris Rowney, California Dept. of Forestry; Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

1 I strongly oppose the Draft Management Plan for Jackson State Forest. I oppose the plan's clearcutting, large-scale commercial logging, cutting of the oldest second-growth stands, inadequate stream protection, herbicide use, and lack of a plan to expand recreation. I personally want Jackson State restored to an old growth redwood forest for habitat, recreation, education and research.

2 With respect to the EIR treatment of recreation in Jackson State Forest, informed decision making and public participation are impossible because no recreation plan is discussed, and protection for existing trails and campgrounds is not discussed in meaningful detail.

3 I am very concerned about two planned timber harvests adjacent to Mendocino Woodlands Camp and the planned Woodlands Gulch harvest which has no buffer zone.

The Mendocino Woodlands area was transferred to the state of California explicitly for parks, recreation, and conservation. The state of California should live up to that commitment.The forest should be preserved for the benefit of the people, not the timber industry.

Sincerely, Lois Postel 642 E. Malibu Dr.
Tempe, AZ 85282

Sincerely,

Lois Postel

Letter LP-367

Response to Comment 367.1
Please refer to General Response 1.

Response to Comment 367.2
Analysis of recreational activities on JDSF including discussion in meaningful detail on existing trails and campgrounds is provided for in the DEIR beginning on page 399.

Response to Comment 367.3
Please refer to General Response 1. Page 400 of the DEIR states,

> The legislature also directed that prior to authorizing the sale and cutting of timber from the Mendocino Woodlands Special Treatment Area, the State Forester shall solicit and consider the recommendations of the Department of Parks and Recreation with respect to the prevention of unnecessary or unreasonable interruption or loss of facilities or resources essential to operations of the Outdoor Center (PRC 5829).

G 368

Barbara Gardner
43300 Little River airport rd.#46 , Little River, CA 95456

July 15, 2002

Chris Rowney
1416 19th Street
Sacramento, CA 94244

Subject: Management Plan and EIR for Jackson State Forest

Dear Chris Rowney:

Please provide me your response to the following:

To: Chris Rowney, California Dept. of Forestry; Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

The Draft Management Plan for Jackson state Forest is an insult to the people of Northern California. Clearcutting any part of this forest is unacceptable. Small-scale, carefully limited commercial logging is all that this public forest should be subjected to. Have you seen the stripped hillsides in Oregon where forests used to be before they were clearcut? I have, and am furious at the CDF's kowtowing to the big timber interests.

The CDF is a public agency and should not be a tool of corporate interests.This flawed EIR needs revision and resubmission, if you care what the voters of northern California want, not just a few timbermen who want to raid our resources to line their own pockets.

Sincerely,

Barbara Gardner 43300 Little River Airport Rd. #46 Little River, CA 95456

Sincerely,

Barbara Gardner

Letter BG-368

Response to Comment 368.1
Please refer to General Responses 1, 4, and 8.

RB 369

Randall Bancroft
PO Box 2031 , Fort Bragg, CA 95437-2031

July 10, 2002

Chris Rowney
1416 19th Street
Sacramento, CA 94244

Subject: Management Plan and EIR for Jackson State Forest

Dear Chris Rowney:

Please provide me your response to the following:

To: Chris Rowney, California Dept. of Forestry; Subject: Draft Management Plan and EIR for Jackson Demonstration State Forest

Dear Mr. Rowney:

Jackson State Demostration Forest is for all of the people of California, and our guests from other places in the world -It IS NOT for the logging companies use only.
-It IS NOT only meant to bring revenues into the State coffers.

1 Your new forest policy must include forest use by all parties -campers, hikers, picknickers, research bioligists, rreasearch geoligists, and so forth.

If you and your group of State Forestry officials cannot understand this and comply with the wishes of all of the people, then we will have to have you removed from your responsible positions.

Sincerely, Randall Bancroft, BSc, DC

Sincerely,

Randall Bancroft

Letter RB-369

Response to Comment 368.1
The DEIR includes Proposed Management Measures and Specific Management Actions in regards to increases in recreation activities and facilities at JDSF (pages 408-409) that are consistent with DFMP Goal #5, "low impact recreational opportunities that are compatible with forest management objectives." Please refer to Response 201.7 for additional information regarding demonstration and research opportunities within JDSF.

MB 370

Mary Bull, Coordinator, Save the Redwoods/Boycott the Gap Campaign

Chris Rowney
California Department of Forestry
PO Box 944246, Sacramento, CA 94244

Re: Draft Management Plan and EIR for Jackson Demonstration State Forest

July 15, 2002

Dear Mr. Rowney:

Save the Redwoods/Boycott the Gap is an international campaign with tens of thousands of supporters and an activist network of over 1500 groups and individuals worldwide (500 in California). Our primary goal is to see the once magnificent coast redwood forest ecosystem—130 million years in the making, the densest biomass on Earth—restored to old-growth characteristics and protected from the rapacious overlogging it has endured since Euro-Americans stole it from the natives. Further, since Jackson State Forest is the only significant public holding on Mendocino's redwood coast, we want this forest preserved exclusively for wildlife and responsible recreational uses for all time. Consequently, I and my constituency strongly oppose the Draft Management Plan for Jackson State Forest. To continue clearcutting, large-scale commercial logging, high-grading, herbicide use, and cutting in stream zones in Jackson State Forest, given the overall vastly depleted state of coast redwood forestland, with endangered species on the brink of extinction in every watershed and a dubious future in private hands, displays a frightening, short-sided ignorance, all the more alarming because it comes from an agency who should be aware of this grave situation, and doing everything within its power to correct it.

This travesty is magnified exponentially when one considers it in the context of global deforestation, the resulting world water crisis, and the global warming disaster. Following are some statistics I hope you will digest:

- **Deforestation.** According to the World Wide Fund for Nature, 80% of the worlds forests have been completely destroyed or so damaged they can no longer be logged sustainably, and most of this has been done in the last 30 years. According to the UN Development Program, only a nuclear war could equal the global effects of this destruction.

- **Deforestation and the world water crisis.** According to the Council of Canadians study, "Blue Gold," deforestation is a leading cause of the drying of the earth's surface, desertification, and the resulting world water crisis we are now facing, with 1 billion people without access to clean water, and world demand for fresh water expected to exceed supplies by 56% in 2020. According to the UN World Food

Program, the drought and famine currently raging through Central America is due to one thing: deforestation.

- **Deforestation and global warming.** According to Global Awareness in Action of Canada, deforestation adds between 1 and 2.6 billion tons of carbon dioxide to the atmosphere each year, contributing significantly to global warming and all of its deleterious effects (by comparison, 5.4 billion tons of CO2 enter the atmosphere from the burning of fossil fuels). According to scientists at the Woods Hole Research Center in Massachusetts, the major steps needed to halt global warming would include a 50% reduction in consumption of fossil fuels, the halting of deforestation, and a massive program of reforestation. Scientists also strongly link deforestation to other "natural" disasters, such drought, flooding, severe storms, and hurricanes.

- **Deforestation and species extirpation.** The forest ecosystems are the most biologically diverse of all the types of ecosystem our planet supports. In 1981, there were 230 endangered species listed world wide. By 1989 that number increased to 35,000. According to the National Science Foundation, one quarter or more of the earth's species will become extinct by 2050 unless measures are taken to preserve them.

Clearly, as a planet we must adopt a rigorous course of protection and restoration of our forests and watersheds if we are to survive, let alone preserve the incredible biodiversity our planet was once capable of supporting. To do so, we must protect and restore forests and watersheds at the regional level. You have that choice now. You can either contribute to the moribund course that we are on, or you can bend to the will of the people: End
2 commercial logging in Jackson State Forest and restore it to ancient characteristics, to be enjoyed as a recreational park and wildlife preserve by us and future generations.

Finally, the draft EIR is inadequate—like industry, you fail to supply the data necessary to allow the public to fully assess your management plan; you also fail to consider the
3 alternative uses of wildlife preserve and recreational park that a significant faction of the public clearly prefers.

Sincerely,

Mary Bull
Coordinator, Save the Redwoods/Boycott the Gap Campaign

Letter MB-370

Response to Comment 370.1
JDSF is required to comply with the Legislative mandate (PRC 4631) and Board Policy (0351.2), which describe timber production as the primary land use on the forest (DEIR pages 9 and 10). The DFMP complies with the mandate and Board Policy, as well as providing suitable protection of public-trust resources (fish, wildlife, etc.) as analyzed in the DEIR.

Response to Comment 370.2
Please Refer to General Response 8.

Response to Comment 370.3
Please refer to Response VT-241.2.

DL-374

National Park Service
U.S. Department of the Interior

Pacific Great Basin
Support Office

1111 Jackson Street
Suite 700
Oakland, CA 94607

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August 2, 2002

Mr. Christopher P. Rowney
Jackson Demonstration State Forest Program Manager
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

Re: Jackson Demonstration State Forest Draft Management Plan and Draft Environmental Impact Report for the Comprehensive Update to the Jackson Demonstration State Forest Draft Management Plan

Dear Mr. Rowney:

The National Park Service (NPS) is writing to provide comments on the above named documents. We were only recently informed of the existence of the documents and would like to note that due to the difficulty in obtaining the full documents, we were only able to obtain copies of the sections dealing with historic resources. Therefore, our comments will be directed to the National Historic Landmark (NHL) program requirements.

As you may know, the Mendocino Woodlands Recreational Demonstration Area (MWRDA) was designated by the Secretary of the Interior as a NHL on September 25, 1997. This is the highest level of recognition conferred on historic resources of national significance. These resources are nationally important and must maintain the highest level of integrity. There are only 130 NHLs in the state, twenty-six of which are located in California State Parks. NPS is charged with ensuring that the resources are maintained and that the integrity is protected. NPS must report this information to each Congress.

At the time of the original designation, it was understood that there would be a boundary expansion to reflect the original boundaries of the MWRDA. The additional area, under the control of California State Forestry, had not been fully surveyed and the contributing resources enumerated and was therefore not included.

In spring 2000 additional documentation was submitted to NPS for the boundary increase. NPS was convinced by the documentation that the proposed expansion area did meet the NHL criteria and contributed to the significance of the entire resource. Per its agreement with State Forestry, NPS forwarded the proposed boundary expansion information to State Forestry.

EXPERIENCE YOUR AMERICA
The National Park Service cares for special places saved by the American people so that all may experience our heritage.

Due to objections from State Forestry and questions raised by the California State Historic Preservation Office, the application for the boundary expansion was placed on hold by NPS. To date, the issues have not been resolved; however, NPS still views the expansion area as retaining its historic integrity and eligibility for designation. NPS would be pleased to work with the State to resolve these issues.

1. With this information in mind, we offer the following comments on both the Management Plan and the Draft EIR. It appears that the NHL is not sufficiently described and its boundaries discussed. The current NHL boundaries and the proposed expansion area should be presented. Both of these boundaries constitute the historic resource, regardless of the designation. The campsites and related buildings in the MWDRA are significant because they supported the recreational functions in the proposed expansion area and the water system in the expansion area supported the camps.

The entire resource and its environment should be considered in both documents. The management of Jackson State Forest should take into consideration the historic designation to ensure that the MWDRA and its environment are protected. If there are treatments to be carried out in the proposed expansion area, the protection of the identified historic resources as enumerated in the expansion document should be ensured. It does not appear in either document that these considerations have been made sufficiently. NPS is concerned that if the expansion area is impacted by adverse actions, the entire resource could suffer a loss of integrity.

NPS would be please to comment on the full documents, if they can be made available to us. If you have any questions about our comments, please contact Michael Crowe, NHL Program Coordinator at 510/817-1396 or michael_crowe@nps.gov.

Sincerely,

David W. Look

David W. Look, AIA
Cultural Resources Team Leader

cc:
SHPO-CA, attn: Steve Mikesell
WASO-NRHE, attn: Patty Henry
Kendall Smith, Cong. Mike Thompson District Office, PO Box 2208 Fort Bragg, CA 95437
Steade Craigo, Department of Parks and Recreation, 1460 9th Street, Sacramento, CA 95814
Ronnie James, Mendocino Woodlands Camp Association, P.O. Box 1336, Mendocino, CA 95460

Letter DL-374

Response to Comment 374.1
Please see response to RL-333.1.

MT-375

MIKE THOMPSON
1ST DISTRICT, CALIFORNIA

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AGRICULTURE
ARMED SERVICES

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
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August 7, 2002

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AUG 14 2002

Mr. Christopher P. Rowney
Jackson Demonstration State Forest Program Manager
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, California 94244

Dear Mr. Rowney:

I am writing regarding the Draft Environmental Impact Report (DEIR) for the Jackson Demonstration State Forest Management Plan (DFMP). I respectfully submit the following comments:

1. My understanding is the Special Treatment Area (STA) of the Mendocino Woodlands is a unique area within the Jackson State Demonstration Forest. A comprehensive management plan needs to address the unique characteristics of the STA within both historical and educational contexts.

I understand portions of the Mendocino Woodlands are currently listed as a National Historic Landmark (NHL). Additionally, the STA has a pending nomination before the National Park Service's Landmark Committee. Under Section 5024 of the Public Resources Code the historic status of a NHL or nominee needs to be addressed.

Lastly, the Citizens Advisory Committee on the Jackson Demonstration State Forest issued a comprehensive report on the Committee's findings regarding management practices that balance sustained yield logging and environmental protection while encouraging recreational activities that revitalize the local economy. This document deserves consideration in the formation of a management plan for Jackson Demonstration State Forest.

Sincerely,

MIKE THOMPSON
Member of Congress

MT: ks

Printed on recycled paper.

Letter MT-375

Response to Comment 375.1
Please see response to RL-333.1.

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Section VIII

Summary of Corrections to the DEIR

Chain fern (***Woodwardia fimbriata***) and deer fern (***Blechnum spicant***) are found in moister microsites and are not common enough to include in the Series description on page 129 of the DEIR; therefore the first paragraph in the Redwood Series description should not include chain fern ***(Woodwardia fimbriata)*** and deer fern ***(Blechnum spicant).***

According to Teresa Scholars of College of the Redwoods (Public Comment Letter TS-105), vine maple does not occur on JDSF. The first paragraph in the Red Alder Series (page 131 of the DEIR), second-to-last sentence should not include vine maple ***(Acer circinatum)***.

According to CDF personnel, Sitka spruce (***Picea sitchensi)*** should not be included in first paragraph, second sentence of the Red Alder Series (page 131 of the DEIR).

It is true that Monterey pine (***Pinus radiata***) is planted as an ornamental in Mendocino County. CDF personnel recently communicated that the experimental plantings of Monterey pine are not believed to have spread or naturalized enough to be considered part of the Bishop pine community. The first paragraph in the Bishop Pine Series (page 133 of the DEIR), should not include, Monterey pine ***(Pinus radiata).***

Section 6.2.1, on page 134, "Invasive Exotic Species" of the DEIR should include the following:

> Invasive exotic species can cause negative impacts to native species assemblages and can greatly impact native diversity. Rare native plant species that are associated with forest clearings are especially vulnerable to displacement by exotic invasives. Such rare plants include Humboldt milk-vetch (***Astragalus agnicidus***), Bolander's reed grass (***Calamagrostis bolanderi***), and maple-leaved checkerbloom (***Sidalcea malachroides***).
>
> There are currently five species of invasive exotic plants that occur in substantial frequency across the JDSF. All are on the California Exotic Pest Plant Council (CalEPPC) List A-1 (the most-invasive wildland pest plants with widespread occurrence). These are pampas grass (***Cortaderia jubata***), Scotch broom (***Cytisus scoparius***), French broom (***Genista monspessulana***), yellow star-thistle (***Centaurea solstitialis***), and Tasmanian blue-gum (***Eucalyptus globosus***).
>
> Additional List A-1 species that occur on JDSF and have the potential to become more invasive on the Forest are Himalayan blackberry (***Rubus discolor***), gorse (***Ulex europaea***), English ivy (***Hedera helix***), wild fennel (***Foeniculum vulgare***) and tamarisk (***Tamarix spp***.). Gorse occurrence is currently limited to the Western WWAA. Another List A-1 plant, Cape-ivy (***Senecio mikanioides***), is known to be located in two isolated places within JDSF.

All of the above-listed A-1 species are widespread throughout much of California (with pampas grass and Cape-ivy restricted primarily to the coastal regions); all thrive in disturbed habitats. The various roads and skid trails, forest openings, and other ground-disturbed areas provide habitat for further infestation by invasive species.

List A-2 (the most invasive wildland pest plants in regional areas) plants known on JDSF are cotoneaster (***Cotoneaster spp***.) and pennyroyal (***Mentha pulegium***). Both occur with enough frequency to become a problem on the Forest.

Beginning in DEIR Section 6.2.1 on page 134, the following species should be included alphabetically among the existing species accounts in this section:

Cotoneaster spp.--***cotoneaster*.** Native to China, cotoneaster is a popular shrub or small tree in local landscaping. This member of the rose family (***Rosaceae***) has small pink to white flowers producing heavy crops of bright orange to red berries, which are attractive to birds and wildlife. ***C. franchetti*** has escaped into our coastal forests, where it readily becomes naturalized. Spreading rapidly by seed and root sprouts, it becomes a problem by displacing native shrubs (Pickart and Eicher 2000). Rosatti (in Hickman 1996) reports ***C. pannosa*** as also occurring in mixed-evergreen forests of the region. The CalEPPC List A-2 also registers ***Cotoneaster lacteus*** as occurring in many coastal plant communities. Additional Cotoneaster species, in general, are included by CalEPPC on its List of Exotic Pest Plants of Greatest Ecological Concern that Need More Information.

Cotoneaster is common in the region, and frequently observed on JDSF (Public Comment Letter TS-105).

Foeniculum vulgare--wild fennel. Wild fennel is in the carrot family (***Apiaceae***). Native to southern Europe, wild fennel is widely escaped from cultivation in the Western Hemisphere, and is locally abundant and invasive (Hickman 1996). Wild fennel is perennial, with flower stalks growing to more that 3 m tall. It smells strongly of licorice or anise. Wild fennel invades roadsides and disturbed sites where it out-competes native plants. This List A-1 weed spreads by seed, and persists because of its strong taproot. By comparison, the cultivated garden herb, fennel (***Foeniculum dulce***), is classified as non-invasive by CalEPPC.

T. Sholars (Public Comment Letter TS-105) has observed wild fennel occurrence on the Forest, and considers it to have the potential to become a problem there.

Hedera helix--English ivy. English ivy is a shiny-leaved, woody vine belonging to the ginseng family (***Araliaceae*).** Palmately-lobed leaves are borne on juvenile stems, while those on mature stems are generally entire. Native to Eurasia, this plant was introduced to North America by early European settlers (Hickman, 1993). English ivy is usually first established in a disturbed site, then aggressively spreads to the surrounding forest by vegetative growth as well as by seed from its black berries. There are no natural controls for English ivy. The vines grow along the ground engulfing and smothering all shrubs,

grasses, and forbs by its overgrowth. The vines attach to trunks of larger shrubs and trees by aerial rootlets, and continue to grow upwards reaching for sunlight. The woody vines encircle tree trunks, inhibiting tree growth and vigor. The ivy vines also spread over the branches and foliage of the tree canopy. Native plant life becomes smothered and dies beneath the dense growth of English ivy. Such habitats are commonly alluded to as "ivy deserts."

English ivy is known to occur in the region and on the forest; and can be a serious forest pest (especially in riparian areas) where it can out-compete, overgrow, and kill the understory plants, as well as the trees, of the forest canopy.

Mentha pulegium--pennyroyal. Pennyroyal, a member of the mint family (***Lamiaceae),*** has upright to trailing stems producing relatively short flowering spikes (up to one foot or taller) with lavender-colored flowers arranged in progressively larger globular flower heads down the stalk. All parts of the plant have a strong characteristic minty odor.

It has invaded local wetlands and moist areas along roadsides and ditches. Because of the many resprouts from its rhizomes (underground stems), this species can form dense, impenetrable mats that choke out native plants (Pickart and Eicher 2000). T. Sholars (Public Comment Letter TS-105) reports that pennyroyal occurs with enough frequency in JDSF to pose a threat in favorable sites.

Tamarix spp.--tamarisk or salt cedar. Tamarisk is in its own family, the ***Tamaricaceae***. It is a shrub or tree with minute leaves and flowers. Wilken (in Hickman 1996) reports two species of tamarisk that occur regionally: ***T. parviflora*** from southeastern Europe (< 5 m tall), and the less common ***T. gallica*** that is native to southern Europe (< 8 m tall). Using a hand lens, the two can be readily differentiated by their floral parts that are in 4's and 5's, respectively. Tamarisk prefers sunny sites with good soil drainage. Both species can be found in washes and along roadsides (***T. gallica*** less commonly. ***T. parviflora*** is also found on slopes and sand dunes, while ***T. gallica*** prefers flats). Tamarisk is used horticulturally for windbreaks and is planted as an ornamental. It readily escapes into wildlands, where the deep roots lower the water table to out-compete shallow rooted natives.

Known to occur on JDSF (Public Comment Letter TS-105), tamarisk potentially could become invasive.

The following corresponding reference should be added to the references section of the DEIR:

Pickart, A. and A. Eicher. (2000). ***Invasive Weeds of Humboldt County: A Guide for Concerned Citizens***. 14 pages Arcata: Bug Press.

[Per Response to Comment 105.3] Section 6.2.1, on Page 136, "Invasive Exotic Species" of the DEIR should include the following species:

> ***Rubus discolor***--Himalayan blackberry. Himalayan blackberry is a robust, evergreen, arched bramble in the rose family (***Rosaceae***). Its brambles can grow to 3 meters tall (Munz and Keck 1959). Stems are 5-angled, 5 to 15 mm in diameter, and contain many prickles (Hickman 1993). Leaves are compound (often with five leaflets but sometimes three), sharply toothed, and white below. Inflorescences are many-flowered panicles of white to pink flowers. Fruits are shiny black drupelets clustered in an oblong shape (Hickman 1993, Munz and Keck 1959). Plants inhabit a variety of disturbed habitats at less than 1,600 meters in elevation and are native to Eurasia (Hickman 1993). Apparently, rats favor them for food and shelter.
>
> The common occurrence of Himalayan blackberry within some areas of the JDSF (DFG comments on JDSF DEIR, and Public Comment Letter TS-105) indicates that it can spread readily on the Forest. This species has the potential to spread primarily to areas that are near existing concentrations and where openings are maintained for a sustained period of time.

The following should be included in Appendix 8D-3 of the DEIR:

- Add ***Gentiana setigera*** "Mendocino gentian," CNPS list 1B, RED 3-2-2, State None, Federal None, Decision and Rationale: Watch for (Lower Montane Coniferous Forest and Meadows/mesic in northern Mendocino and Del Norte Cos.; public comment letter TS)-
- Add ***Howellia aquatilis*** "water howellia," CNPS list 2, RED 3-2-1, State None, Federal FT, Decision and Rationale: Watch for (freshwater marshes and swamps in northeastern Mendocino Co.; public comment letter TS)-
- Change the Decision and Rationale row for Microseris borealis to state: "Watch for Bogs and Fens, Lower Montane Coniferous Forest, Meadows."

Occurrences of murrelets in Mendocino County and in the vicinity of JDSF have been updated with the following information and should be added to the end of third paragraph on page 248 of the DEIR:

> Birds have also been detected at Alder Creek, Admiral Stanley State Park, Branscomb reserve, Big River, Greenwood Creek, Gualala River, and Garcia River (J. Stein pers. comm in K. Nelson's Comment dated July 15, 2002; comment SN-200). No specific information, such as observer, survey type, dates, numbers and type of detections, etc., was provided.

[Per Response 236.6A] The Plant Species of Concern list (page 143 of the DEIR) should be revised to read as follows:

Plant and Lichen Species of Concern

- ***Arctostaphylos mendocinoensis,*** **"**pygmy manzanita**"**
- ***Astragalus agnicidus,*** **"**Humboldt milkvetch**"**
- ***Calamagrostis bolanderi,*** **"**Bolander's reed grass**"**
- ***Campanula californica,*** **"**swamp harebell**"**
- ***Carex californica,*** **"**California sedge**"**
- ***Cupressus goveniana ssp. pigmaea,*** **"**pygmy cypress**"**
- ***Lilium maritimum,*** **"**coast lily**"**
- ***Lycopodium clavatum,*** **"**running-pine**"**
- ***Mitella caulescens,*** **"**leafy-stemmed mitrewort**"**
- ***Pinus contorta ssp. bolanderi,*** **"**Bolander's pine**"**
- ***Usnea longissima,*** **"**long-beard lichen**"**

[Per Response 236.6B] The Decision and Rationale column in Appendix 8D-3 of the DEIR for the ***Lycopodium clavatum*** row should read: "Known."

[Per Response 236.6D] The scoping, survey, and mitigation process should allow for inclusion of species that are not on Table 14, so addition and removal of sensitive species to and from Table 14 should not affect protection of sensitive species. After reviewing DFG's comments and available habitat information, CDF concurs that it is reasonable to remove the above-mentioned species from Table 14. Table 14 of the DEIR will have the following species removed based on best available current knowledge of the species range and likely habitat: ***Arenaria paludicola*** "marsh sandwort," ***Castilleja mendocinensis*** "Mendocino coast Indian paintbrush," ***Horkelia marinensis*** "Point Reyes horkelia," ***Limnanthes bakeri*** "Baker's meadowfoam," ***Navarretia leucocephala*** ssp. ***bakeri*** "Baker's navarretia," and ***Phacelia insularis*** var. ***continentis*** "North Coast phacelia." Of the above, only ***Castilleja mendocinensis*** and ***Horkelia marinensis*** are in the DFMP list. ***Limnanthes bakeri*** was mistakenly listed in Table 14 but was listed in Table 15 as "Unlikely."

In Appendix 8D-1 of the DEIR, the following species descriptions should not be included: ***Arenaria paludicola*** "marsh sandwort," ***Castilleja mendocinensis*** "Mendocino coast Indian paintbrush," ***Horkelia marinensis*** "Point Reyes horkelia," ***Navarretia leucocephala*** ssp. ***bakeri*** "Baker's navarretia," and ***Phacelia insularis*** var. ***continentis*** "North Coast phacelia." ***Limnanthes bakeri*** was not included in Appendix 8D-1.

The Decision and Rationale column of Appendix 8D-3 should include the following:

- (***Arenaria paludicola***) "Unlikely (misidentification for Mendocino Co., according to DFG comments for the DEIR)**"**
- (***Horkelia marinensis***) "Unlikely (coastal dunes, coastal prairie, coastal scrub / sandy)"

- (***Navarretia leucocephala*** ssp. ***bakeri***) "Watch for (meadows, valley and foothill grassland)"
- (***Phacelia insularis*** var. ***continentis***) "Unlikely (coastal bluff scrub, coastal dunes, sandy soils, and bluffs)"
- Note that no change is needed for the Decision and Rationale for excluding ***Castilleja mendocinensis*** and ***Limnanthes bakeri*** from Table 14; they are already listed as "unlikely."

[Per Response 236.6E] Table 14 should be titled, "SPECIAL STATUS PLANT AND LICHEN SPECIES WITH POTENTIAL OCCURRENCES WITHIN JDSF" and should include long-beard lichen. Table 14 of the DEIR should include the following:

- ***Boschniakia hookeri*** "small groundcone," CNPS list 2, RED 3-1-1, State None, Federal None
- ***Glyceria grandis*** "American manna grass," CNPS list 2, RED 3-1-1, State None, Federal None
- ***Usnea longissima*** "long-beard lichen," CNPS None, RED None, State None, Federal None

An extra sentence should be inserted in the DEIR just after Table 14 that discussed the ranking that qualifies this lichen to be considered sensitive. The sentence in the DEIR should state:

> Usnea longissima is considered a sensitive lichen due to a Global Rank of G3 (21-100 element occurrences OR 3,000-10,000 individuals OR 10,000-50,000 acres) and a State Rank of S2.1 (6-20 element occurrences OR 1,000-3,000 individuals OR 2,000-10,000 acres; very threatened) as listed in DFG's Special Vascular Plants, Bryophytes, and Lichens List (Natural Diversity Database July 2002).

Appendix 8D-1 should be titled, "Species descriptions for rare, threatened, endangered, and sensitive plant and lichen species potentially occurring on JDSF."

The following species should be included in Appendix 8D-3 of the DEIR:

- ***Boschniakia hookeri*** "small groundcone," CNPS list 2, RED 3-1-1, State None, Federal None, Decision and Rationale: Likely (recent detection in coastal forest in Mendocino Co. according to DFG comments for the DEIR)
- ***Glyceria grandis*** "American manna grass," CNPS list 2, RED 3-1-1, State None, Federal None, Decision and Rationale: Likely (forested riparian areas and wetlands)
- ***Usnea longissima*** "long-beard lichen," CNPS None, RED None, State None, Federal None, Decision and Rationale: Known (recent detection on JDSF by DFG Environmental Scientist Ms. Clare Golec)

[Per Response 236.6F] According to DFG comments, the following ***"Angelica lucida, Antirrhinum virga, Asclepias solanoana, Astragalus breweri, Calystegia collina ssp. oxyphylla, Clarkia gracilis ssp. tracyi, Cypripedium californicum, Eriogonum strictum var. greenei, Eriogonum umbellatum var. bahiiforme, Eschscholzia hypecoides, Gilia sinistra ssp. pinnatisecta, Glehnia littoralis ssp. leiocarpa, Hackelia amethystine, Linanthus rattanii, Lomatium engelmannii, Melica spectabilis, Mimulus nudatus, Navarretia cotulifolia, Navarretia subuligera, Orobanche valida ssp. howellii, Silene campanulata ssp. campanulata, Stellaria littoralis, Streptanthus barbiger, Streptanthus drepanoides***." are not likely to occur on JDSF. Table 15 should not include the above species.

[Per Response 236.6G] Two "CNPS List 3" species that were included in Appendix 8D-3 should be included in Table 15, as follows:

- ***Cardamine pachystigma*** var***. dissectifolia***, Common Name: dissected-leaved toothwort, Family***: Brassicaceae***

- ***Hemizonia congesta*** ssp***. leucocephala***, Common Name: Hayfield tarplant, Family: Asteraceae

Table 15 should be titled, "Table 15: CNPS List 3 and 4 species that may potentially occur within JDSF." No other "CNPS List 3" species, except the above two, resulted from the query of the CNPS Inventory for the project and adjacent quadrangles. However, DFG indicates that the following additional List 3 plant specie has the potential to occur on JDSF (Pers. Com CDFG September 3, 2002): ***Erigeron biolettii,*** common name: streamside daisy.

Other List 3 species may also potentially occur on the JDSF based on habitat requirements. Sensitive plant species that are not listed in Table 14 or Table 15, but that have the potential to occur on JDSF, will be addressed through the adaptive nature of the proposed scoping, survey, and mitigation process with input from DFG.

With the addition of List 3 species to Table 15, it is appropriate to add text to the paragraph before Table 15 to incorporate List 3 species into the scoping process. The paragraph before Table 15 (found on page 138 of the DEIR) should include the following sentence, "In addition, species that are listed by CNPS as plants about which we need more information (List 3) and plants of unlimited distribution (List 4) should be considered during scoping."

[Per Response 236.6H] As with Table 14, Table 15 should contain species that are likely to occur on the JDSF and exclude species that are not as likely to occur. Therefore, based on DFG's comments and recommendations, Table 15 of the DEIR should not include the following species:

> ***Angelica lucida, Antirrhinum virga, Asclepias solanoana, Astragalus breweri,, Calystegia collina*** ssp. ***oxyphylla, Clarkia gracilis*** ssp. ***tracyi, Cypripedium californicum, Eriogonum strictum*** var. ***greenei, Eriogonum umbellatum*** var. ***bahiiforme, Eschscholzia hypecoides, Gilia sinistra*** ssp. ***pinnatisecta, Glehnia littoralis*** ssp. ***leiocarpa, Hackelia amethystine, Linanthus rattanii,***

Lomatium engelmannii, Melica spectabilis, Mimulus nudatus, Navarretia cotulifolia, Navarretia subuligera, Orobanche valida ssp. ***howellii, Silene campanulata*** ssp. ***campanulata, Stellaria littoralis, Streptanthus barbiger, Streptanthus drepanoides.***

[Per Response 236.6I] In the DEIR, the second sentence of the Federal and State-listed Plant Species paragraph (on page 139 of the DEIR) should read, "Five additional plant species are considered by the State of California to be endangered or rare." The following sentence should also be included in that paragraph: North Coast semaphore grass (Pleuropogon hooverianus) is a state listed rare species and is a candidate for state listed endangered.

To clarify the DEIR, the last sentence in the Scoping section (page 145 of the DEIR) should include the following:

> In general, the pre-project scoping process will include DFG input referencing Tables 14 and 15 of the EIR, Appendix 8D-1 and 8D-3, available database information from the California Natural Diversity Database and CNPS Inventory , and other sources of sensitive plant habitat and occurrence data.

The Decision and Rationale column of Appendix 8D-3 in the DEIR should include: ***Erigeron supplex*** "Watch for in coastal prairie/coastal bluff scrub"(according to GJ-236)

[Per Response 236.10A] To clarify that pygmy forests can be considered wetlands, the following should be the second-to-last sentence in the fourth paragraph on page 128 of the DEIR: Swamps (tree-dominated areas, such as on portions of alluvial redwood floodplains) and pygmy forests, can also constitute as wetlands, depending on site conditions. In the same respect, the following should be the second-to-last sentence in the Wetlands section (page 211, section 6.5.1 Setting, second paragraph) of the DEIR: It is likely that some poorly drained areas in the pygmy forest also meet wetland criteria. This sentence is a direct quote from page 15 of the DFMP's Wetlands section.

[Per Response 236.10B] To incorporate ideas that increase awareness of the sensitive nature of the Pygmy Cypress Series, page 132 of the DEIR should state:

- Mendocino pygmy forest, a unique ecological system recognized by the California Natural Diversity Database as a sensitive plant community type, occurs only in coastal Mendocino County.
- Pygmy cypress (***Cupressus goveniana*** ssp. ***pygmyaea***) is a common component in the canopy for Pygmy Cypress Series (Sawyer and Keeler-Wolf 1995)/pygmy forest (Jenny et al. 1969) and is a CNPS list 1B species
- Shrub species are common and can include hairy manzanita (Arctostaphylos columbiana), pygmy manzanita (***Arctostaphylos mendocinensis***; a CNPS list 1B species)
- The herbaceous layer can also include two CNPS list 1B species, swamp harebell (Campanula californica) and coast lily (***Lilium maritimum***).

- It is likely that some poorly drained areas in the pygmy forest also meet wetland criteria." As mentioned above, this sentence is a direct quote from page 15 of the DFMP.

[Per Response 236.10C] To clarify that running-pine (***Lycopodium clavatum***) is not limited to seeps and microsites, page 134 of the DEIR, the applicable section should read as follows: Some sensitive plant species, such as pygmy manzanita, show a great affinity to the pygmy forest, while others, such as swamp harebell, can be found in both pygmy forests and less site-specific habitats. The remaining sentences in this same paragraph should read:

> The restrictions on activities in WLPZs will provide a measure of protection to some species that are generally restricted to riparian areas or wetlands, such as livid sedge. Some species, such as coast fawn-lily and running-pine, are forest generalists and would not necessarily be protected by WLPZ SCAs. Forest openings also provide potential habitat for the endangered Humboldt milkvetch ***(Astragalus agnicidus).***

[Per Response 236.10D] To clarify potential concerns as to how the CNPS lists are compiled and why they should be incorporated into the scoping, survey, and mitigation process, the following text should be included after the last sentence of the paragraph on page 138 of the DEIR:

> The CNPS lists are developed through a formal review process involving a scientific advisory committee composed of noted academic, professional, and amateur botanists across the state. The scientific advisory committee reviews the best available data to compile rare, endangered, threatened, and uncommon plant lists. CDFG currently accepts the premise that placement of plants on CNPS lists 1A, 1B and 2 provides a fair argument that they qualify as rare, endangered or threatened under Section 15380(d) of CEQA (CDFG, comments on DEIR, 2002).

[Per Response 236.10E] The following should be included in the last sentence in the NPPA paragraph (page 140 of the DEIR):

> Other management activities may not be exempted from Fish and Game Code Section 1911 (Fish and Game Code Section 1913). 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 DFG, 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 level less than significant.

[Per Response 236.10F] The following should be inserted after the second sentence in the CEQA paragraph for the final EIR (page 140 in the DEIR):

> CEQA Guidelines Section 15380(b) provides the criteria for Endangered, Rare and Threatened species. Section 15380(d) states that species that are not on state or federal lists, but that meet the criteria in subsection (b) of Section 15380, "shall nevertheless be considered to be endangered, rare, or threatened." CNPS List 1A, 1B, and 2 plant species will be initially presumed to meet these criteria, subject to review and reassessment during scoping. Additionally, under Section 15380, a species will be considered Endangered, Rare or Threatened if it is listed as such under the California or Federal Endangered Species Act and species designated as candidates for listing by the Fish and Game Commission under the CESA are also "presumed to be endangered, rare or threatened." The California ESA presumes that candidate species meet the criteria for listing as Endangered, Rare, or Threatened.

[Per Response 236.10G] To incorporate specific survey protocol and address the goals of adaptive management and of inventory stated for the JDSF, the following should be included on pages 143 and 144 after the first sentence in the paragraph in the DEIR:

> Survey designs will be based on the concepts contained in the DFG Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Plant Communities (DFG 2000). Surveys conducted as part of THP development will follow the practices commonly accepted by CDF and CDFG for THP review. Surveys for other types of projects will recognize the specific features of those projects. [For example, road surface maintenance and roadside brushing are ongoing activities that create repeated periodic disturbances, precommercial thinning typically occurs a few years following the more substantial disturbance of a commercial harvest, and shaded fuel break construction targets ground cover vegetation].
>
> That paragraph should also include: Observations of rare, threatened or endangered plants or plant communities will be recorded on Field Survey Forms and copies provided to CDFG 's California Natural Diversity Database (CNDDB)

To clarify and maintain consistent language regarding the need for pre-project botanical assessment, in the EIR, the phrase "As resources allow" is removed from the first sentence of the last paragraph in the "Plant Species of Concern Possibly Present on JDSF" section (page 144 of the DEIR). This will not significantly alter the intent of the EIR. The stated phrase is also part of a sentence under the "Plant and Animal Species of Concern Possibly Present on JDSF" section in the Management Plan (page 68 of the DFMP) that is presented for a variety of sensitive plant and animal species. It is appropriate to leave the phrase intact in the Management Plan while removing the phrase in the portion of the EIR that discusses pre-project assessments for sensitive plant species.

Additionally, the paragraph under the "Surveys" section of the DEIR should reflect the clarification that currently-accepted survey protocol should be used as guidance in formulation of survey (page 145 of the DEIR), as follows:

> When suitable habitat is present within or immediately adjacent to the project area, project-planning documentation will include surveys based on the concepts contained in the DFG Guidelines, and a discussion of the efforts made to determine presence or absence of the species in question. An assessment area that extends beyond the boundaries of the planned activity may also be required for some species.

[Per Response 236.10H] The paragraph regarding Habitat Management Practices (page 144 of the DEIR) should read:

> Limited removal of species in the pygmy cypress forest may occur as a result of habitat development projects for the Lotis blue butterfly. Prior to habitat development projects, rare plant surveys will be conducted according to accepted survey guidelines (see previous section) to address sensitive plant resources. A qualified botanist will assess the appropriateness of removal of any sensitive plant species in relationship to fostering habitat for the growth of the butterfly's host species, Lotus formosissimus. Effectiveness monitoring will be conducted for any habitat management practice involving removal of plant species in the pygmy forest to assess the response of the forest to habitat alteration.

[Per Response 236.10I] To clarify the treatment of (rare, threatened, and endangered) unlisted species, the first sentence in the Guidelines for Species Surveys and Avoidance of Significant Impacts section (on page 144 of the DEIR) should read:

> The DFMP includes guidelines for pre-project scoping, surveying, and mitigation development. These guidelines are included below. Rare, threatened and endangered species, as defined by Section 15380 of the CEQA Guidelines, will be addressed during the scoping, surveying, and mitigation-development processes. For species that do not meet the Section 15380 definitions of a rare, threatened, or endangered species but that are CNPS list 3 or 4 species, evaluation, scoping and mitigation practices are likely to vary according to identified need, the current state of species knowledge, and consideration of input provided by CDFG through the scoping process.

The Guidelines for Species Surveys and Avoidance of Significant Impacts section should not include the bulleted sections titled "Listed Species" and "Unlisted Species" on page 144 of the DEIR. The sentence at the end of the "Listed Species" bullet that states, "An assessment area that extends beyond the boundaries of the planned activity may also be required for some species" should be included in the Survey section (on page 145 of the DEIR).

[Per Response 236.10J] The paragraph under the California Forest Practice Rules (page 145 of the DEIR) should include the following sentence:

> The FPR state "Where significant adverse impacts to non-listed species are identified, the RPF and Director shall incorporate feasible practices to reduce impacts as described in 14 CCR 898." (Sections 919.4, 939.4, and 959.4 of the California Forest Practice Rules, 2002).

[Per Response 236.10K] The last two sentences in the Impacts introductory paragraph (page 146 of the DEIR) should read:

> An intensive inventory of the botanical resources has not been conducted on JDSF; inventory is planned to occur on a project-by-project basis through surveys patterned after currently accepted protocol. Potential impacts to botanical resources will be addressed at the project implementation level through pre-survey scoping in consultation with DFG, surveys, and development of measures that avoid or mitigate impacts to sensitive plant species.

The Impact 3 and 4 sections (pages 146 and 147 of the DEIR) provide quantification of species that show great affinity to the pygmy forest or SCA's, which species show Mendocino County as the end of their range, and which are known from only this county. To clarify, the number of species in each category should not be included. The fourth sentence in the first paragraph at the top of page 147 of the DEIR (that discusses sensitive species that are protected by default of habitat preference) should read: Some sensitive plant species, such as pygmy manzanita, show a great affinity to the pygmy forest, while others, such as swamp harebell, can be found in both pygmy forests and less site-specific habitats. The remaining sentences in this same paragraph should read:

> The WLPZs will provide a measure of protection to some species that are generally found in riparian areas or wetlands, such as livid sedge. Some species, such as coast fawn-lily and running-pine, are forest generalists and would not necessarily be protected by SCAs.

In the first paragraph in the Impact 4 section on page 147 of the DEIR, the second and third sentences should read:

> Some species, such as Humboldt milkvetch, that have the potential to occur on the JDSF are at the end of their range in Mendocino County, and some, including pygmy manzanita and pygmy cypress, are only known from Mendocino County.

The Impact 3 and 4 sections (pages 146 and 147 of the DEIR) are not specific as to which sensitive plant species will be addressed during the scoping, survey, and mitigation development processes.

The last paragraph of the Impact 4 section (page 147 of the DEIR) should read as follows:

> As discussed above, JDSF has committed to completing a scoping process, including rare plant surveys as necessary, on a management activity or project basis to determine if the management activity or project has the potential to significantly impact a listed or unlisted species that meets the definition of rare, threatened, or endangered under CEQA Guidelines or California Fish and Game Code. JDSF has also committed to developing mitigation measures for the protection of endangered, rare, or threatened plants (as defined previously) and potential habitat if they are identified.

The results of the CNDDB query completed in preparation of this document (see page 225 of the DEIR) did not indicate that murrelets occur in the vicinity of Russian Gulch State Park. However, based on the new information provided in the comments to the DEIR and through discussion with Rene Pasquinelli (Senior Park Ecologist) of the Russian Gulch State Park, the language of the first paragraph on page 248 was incomplete. The following paragraph presents additional information to that portion of the DEIR and should be included:

> There have been numerous inland detections near JDSF. The first detection was in Russian Gulch State Park in 1976 (Paton and Ralph 1988), and the second detection was apparently 1km (0.6mi.) east of the town of Mendocino in 1988 (F. Sharpe, personal communication, as cited in Paton and Ralph 1988). According to Rene Pasquinelli (Personal communication), surveys completed annually over the last five years within Russian Gulch State Park have detected numerous murrelets flying up the Russian Gulch drainage, including "occupied behavior" type observations. Although no nest trees have been identified, this information suggests that murrelets are nesting in the Russian Gulch State Park.

Additionally, the following sentence adds to the information contained in the second paragraph on page 248 of the DEIR: "However, potential murrelet habitat was identified by Ken Hoffman (USFWS) on former G-P lands in the vicinity of the Mendocino Woodlands Recreation Area (R. Pasquinelli, Personal Communication)."

The DEIR presents information on the existing conditions of JDSF in relation to Marbled Murrelet (MAMU) presence and potential habitat that may support MAMU. A discussion regarding the decline of murrelets and their habitat in the region is also included. A discussion on the current regulatory framework is provided indicating that USFWS must be consulted where it is likely that a project could affect federally listed species. For the purpose of clarification, the DEIR should also have stated that the consultation with DFG is required.

The next to last paragraph on DEIR page 109 should read as follows to maintain consistency between the documents:

> JDSF contains approximately 7,440 acres of riparian zone within 150 feet and 100 feet of Class I and Class II watercourses respectively. Of these approximately:
>
> - 22% are in CWHR size class 6 [multi-storied with a Quadratic Mean Diameter (QMD) >24 inches DBH];
> - 41% are in CWHR size class 5 (QMD >24 inches DBH);
> - 22% are in CWHR 4 (QMD 11-24 inches DBH);
> - 11% are in CWHR 3 (QMD 6-11 inches DBH);
> - 3% are in CWHR size classes 2 (QMD 1-6 inches DBH);
> - <1% is in CWHR size classes 1 (QMD <1 inch DBH) and
> - 1% is in pygmy forest, grass, and brush.

CWHR 5 and 6 stands, which compose 71% of Class I and 57% of Class II watercourse WLPZ vegetation types, are many times considered representative of late successional habitat (see Section VII-6.6: Wildlife).

There are 9,680 acres of special concern areas that will be managed to develop late seral characteristics. This acreage represents the area within the following special concern areas:

- old growth groves (459 acres),
- late seral development areas (780 acres)
- Woodlands Special Treatment Area (2,241 acres (2,511 acres minus the 270 acres of the Railroad Gulch study)), and
- Class I and II WLPZ (6,200 of the total 7,440 WLPZ acres that do not overlap other late seral development areas).

Paragraph 2 on page 107 should include the wording, "The California Department of Fish and Game has conducted a status review of coho salmon in the California Central Coast Evolutionarily Significant Unit and has recommended the species be listed as endangered under CESA."

The following passage supercedes the first paragraph of DEIR Appendix 8C, page 16:

> Gallagher (2002) reported the results of the 2000-2001 spawner surveys and generated adult coho salmon and steelhead population estimates using two different methods. The steelhead redd-based estimate ranged from 258(±7) to 583 (±16) with an Area Under the Curve (AUC) estimate of 127-416. The redd-based coho population was estimated to be 555 (±16) with the AUC estimate being 592. Almost twice as many steelhead redds and many more times coho redds were observed during 2000-2001 surveys than the 2000 period (Gallagher 2002). This was attributed to the Gallagher (2000) surveys not starting until late-February and not being able to survey the entire river (Gallagher 2002).

To correct the text in Appendix 8B, page 11, and in order to be consistent with page 122 of the DEIR, the following language should be included in the Appendix:

> Fish populations can be extirpated from watercourses and watersheds if conditions degrade to a point the stocks are no longer self-sustainable. However, nearly two-thirds of the entire land base within the JDSF was clear-cut and burned prior to the introduction of the modern FPRs. Historic activities included massive broadcast burning, road construction and log skidding in watercourses, splash damming, stream clearing, and complete removal of riparian canopy. No effort was made to protect fish stocks at that time and populations did suffer. During the first season of operation the Noyo River egg taking station recorded a 1962-1963 coho run of 1,191 adults and 2,501 grilse. This indicates fish populations were able to maintain viability, albeit at low numbers, through that unregulated logging period. The potential effects to fish populations and aquatic communities from each alternative are significantly less than pre-modern FPR operations.

To clarify the last paragraph in the DEIR for the Humboldt milkvetch species description in Appendix 8D-1, the following paragraph supercedes the first four sentences in the paragraph:

> Current population and trend for Humboldt milk-vetch are declining (CDFG 2000a). Monitoring of population trend has occurred for the population on the private ranch south of Miranda in Humboldt County, but no formal monitoring has been conducted for the populations on the JDSF. JDSF staff has, however, made numerous informal observations of the population for several years.

The results of the CNDDB query completed in preparation of this document (see page 225 of the DEIR) did not indicate that murrelets occur in the vicinity of Russian Gulch State Park. However, based on the information provided in comments on the DEIR and through subsequent discussion with Rene Pasquinelli (Senior Park Ecologist) of the Russian Gulch State Park, the language of the first paragraph on page 248 of the DEIR should read as follows:

> There have been numerous inland detections near JDSF. The first detection was in Russian Gulch State Park in 1976 (Paton and Ralph 1988), and the second detection was apparently 1km (0.6mi.) east of the town of Mendocino in 1988 (F. Sharpe, personal communication, as cited in Paton and Ralph 1988). According to Rene Pasquinelli (Personal communication), surveys completed annually over the last five years within Russian Gulch State Park have detected numerous murrelets flying up the Russian Gulch drainage, including “occupied behavior” type observations. Although no nest trees have been identified, this information suggests that murrelets are nesting in the Russian Gulch State Park.

A sentence should be added to the end of the second paragraph on page 248 of the DEIR to read as follows: However, potential murrelet habitat was identified by Ken Hoffman (USFWS) on

former G-P lands in the vicinity of the Mendocino Woodlands Recreation Area (R. Pasquinelli, Personal Communication).

The last sentence in the Scoping section (page 145 of the DEIR) should read:

> To be thorough, the pre-project scoping process will include referencing Tables 14 and 15 of the final EIR, Appendix 8D-1 and 8D-3, available database information from the CNPS Inventory and California Natural Diversity Database, and any other sources of sensitive plant habitat and occurrence data.

The following change should be made in the Decision and Rationale column of Appendix 8D-3 in the DEIR, "(for ***Erigeron supplex***) Watch for (coastal prairie/coastal bluff scrub**."**

The following passage should replace the last paragraph in the Pygmy Cypress Series section (page 132 of the DEIR):

> The fact that Bolander pine and pygmy cypress are surrounded by swaths of nondwarfed Bishop pine offers anecdotal evidence of fire ecology in the pygmy forest. The Bishop pine is a fire dependent species. Since the stands of Bishop pine are replaced after large fires, and since the pygmy forest species are surrounded by these stands, it is likely that the pygmy species can cope with some level of fire stress. It is unknown under which frequency, intensity, and scope of fire events the pygmy forest species could thrive. Further work on the life history of the pygmy forest species is also needed to understand the role of fire.

The California Geologic Survey (CGS) completed the map of "Relative Landslide Potential" for JDSF after the completion of the DFMP; therefore the data in the CGS map has not yet been incorporated. As stated in CDF's response to CGS, the Department agrees that the map should be utilized for the basis of defining "Special Concern Areas" within JDSF. This map will be referenced to and incorporated into future management decisions at JDSF. The map requires reconciliation with Figure H of the DEIR "Special Concern Areas Map." Incorporation of this statement serves to update the Geologic Section of the DEIR.

Section VI

Oral Testimony

This section of the JDSF FEIR presents a summary of public comment received at the two public hearings for the project. Responses follow each summarized comment. The hearings were held in Ukiah, California on Wednesday, June 12, 2002 starting at 3:00 PM and 6:00 PM. A certified shorthand reporter completed a transcript of each hearing. Respondent's comments are summarized and responded to in order of appearance at the hearing.

3:00 PM Session

1. George Hollister: Forwarded general support for several aspects of the proposed DFMP. States many perceived positive results of project impacts.
   Response: Please see response to Letter GH-25 in Section V. Mr. Hollister's comments were repeated in written comments to CDF.

2. Mary Wells: Generally supports DFMP, but would like to see additional larger campground buffers, control of illegal dumping, trail reconstruction.
   Response: Please see response to MW-45 in Section IV. Ms. Well's comments were repeated in written comments to CDF.

3. Gary Roach: General support for the DFMP, current and past management of the Forest.
   Response: Please see response to Support Letters, Section V.

4. Paul Hughes: States that the DFMP lacks a recreation plan and the Forest could be better utilized with one. States that logging impacts water quality and quantity. Does not support clear cutting. Supports preservation of old-growth habitat. Support for Alternative E.
   Response: Please see response to PH-151 in Section IV. Mr. Hughes' comments were repeated in written comments to CDF.

5. Fred Wells: States support for additional volunteer programs.
   Response: Volunteer programs will continue to be allowed under the DFMP. There is no current plan to establish a CDF position solely for volunteer coordination.

6. Tom Smythe: Supports uneven-aged management. Wants to see logs processed locally.
   Response: Please refer to the DEIR for analysis of the proposed uneven and even-aged management practices. The DFMP calls for a variety of harvest choices for comprehensive management options. The destination of the logs from the Forest is beyond the control of CDF and beyond the scope of the DEIR.

7. Bill Heil: Support for Alternative E. Does not feel that CDF will conduct "independent review" of projects under the DFMP. Points out that a "big mill" in Fort Bragg has closed since the EIR was started. Feels closure of mill will allow the two remaining mills to control

the bidding process to the detriment of smaller mills. States that the Hare Creek plan disturbed too much soil on the site.
Response: Please refer to General Response 1. Please also see response to BH-311 in Section IV; Mr. Heil's comments regarding mill closure and log contracts were contained in his comment letter to CDF. Soil disturbance on a single past THP within JDSF is beyond the scope of this EIR.

8. Niel Fischer: General support of Alternative C. Comments repeated in letter to CDF.
Response: Please see response to Support Letters, Section V.

9. Mark Rentz: General support of Alternative C. Comments repeated in letter to CDF.
Response: Please see response to Support Letters, Section V.

10. Zachary Jones: General support of Alternative C.
Response: Please see response to Support Letters, Section V.

11. Jere Melo: General support of Alternative C. Comments repeated in letter to CDF.
Response: Please see response to Support Letters, Section V.

12: Vince Taylor: States that CDF did not fulfill its legal obligation to make all materials available to the public. Takes issue with CDF not accepting e-mailed comment.
Response: The public comment period was extended to July 19th to allow for comment from those who had difficulty obtaining information. CDF received a very large volume of comments from well informed respondents. The documents were available in hardcopy and on the CDF website from the date of posting. Please refer to General Response 3 regarding e-mailed comments.

13. Jim Clark: General support of Alternative C.
Response: Please see response to Support Letters, Section V.

14. Rebecca Fitzgerald (North Coast Regional Water Quality Control Board): States that NCRWCB is working on implementation plans and revisions to the basin plan for the Noyo and Big River watersheds. Would like the DFMP to be able to adapt to these forthcoming plans in the future.
Response: Please refer to response to Letter FR-126. Respondent's concerns are repeated in NCRWQCB comment letter to CDF. The DFMP generally calls for adaptive management and CDF will meet all future legal requirements regarding waste discharge.

15. Christine Wright-Shacklett (North Coast Regional Water Quality Control Board): States that NCRWCB is working on revisions to waiver and waste discharge requirements. Would like the DFMP to be able to adapt to these forthcoming plans in the future.

Response: Please refer to response to Letter FR-126. Respondent's concerns are repeated in NCRWQCB comment letter to CDF. The DFMP generally calls for adaptive management and CDF will meet all future legal requirements regarding waste discharge.

16. Patti Campbell (Mendocino County Board of Supervisors): Read excerpts from Mendocino County Board of Supervisors Resolution #02051. Resolution states support for sustainable production and management of timber resources in JDSF. Comments were repeated in written comment to CDF.
    Response: Please refer to response to agency letter JDC-48 in Section III.

17. William Smith: General support of continuing demonstration and logging on JDSF.
    Response: Please see response to Support Letters, Section V.

18. Erik Geiger: General support of Alternative C.
    Response: Please see response to Support Letters, Section V.

6:00 PM Session

1. Jerry Philbrick: General support for DFMP.
   Response: Please see response to Support Letters, Section V.

2. John Burns: No comment.

3. Ed Ehlers: General support for DFMP. Notes that plan calls for updates every five years and as needed.
   Response: Please see response to Support Letters, Section V. Updates to the DFMP will generally occur every five years unless there is a need to update sooner.

4. Mike Anderson: General support for DFMP. Notes that he obtained hardcopy of DEIR and DFMP without difficulty.
   Response: Please see response to Support Letters, Section V.

5. Jerry Filbrick: General Support for DFMP.
   Response: Please see response to Support Letters, Section V.

6. John Starkey: General support of DFMP. Introduced logging crew.
   Response: Please see response to Support Letters, Section V.

7. Philip Schuster: General Support for DFMP.
   Response: Please see response to Support Letters, Section V.

Appendix 14
Recommended Management Practices for Controlling Sudden Oak Disease (SOD)

1. General Management Practices for operations where products do not move from the state are as follows:

   a. A "free-from" survey can be conducted and, if no infected hosts are found, no additional mitigations are required. If the survey is conducted it must be conducted by an RPF or other approved person that has attended training for survey and sampling, and is certified as an official sampler, and the plan must explain how the survey was conducted as explained in the training. The "free-from" certification and the approved harvest document explaining the survey process acts as the compliance agreement and the SOD mitigation measures.

   b. Currently there is no provision that allows moving any host material out-of-state under the federal regulations without removing all bark prior to shipment out-of-state.

   c. If a "free-from" survey is not conducted, all hosts are assumed to be infected and SOD mitigations as discussed below should be included in approved harvest documents and shall be discussed during the on-site RPF-LTO meeting prior to commencement of timber operations (14 CCR 1035.2).

2. When a free-from survey has not been conducted, the following Management Practices should be incorporated into THPs prepared on JDSF lands to prevent the spread or introduction of SOD:

   a. Commercial Harvest on a Regulated Site Where Infected Trees Are Not Being Harvested:

      - Regulations for movement of host material still apply even though logs are not removed from the site. Infected host material (especially foliage) could be picked-up on logging equipment and transferred to other sites. Mitigation measures to minimize the unintended movement of host material are required. Forest Staff or contractors shall complete inspection of loads of logs and equipment leaving the site to ensure that no host material is being transported without a permit. This may require cleaning dirt or mud from the vehicle to remove host plant material embedded in the dirt or mud, depending on conditions when the timber harvest is conducted.

      - If firewood from host material is being removed from the site for commercial or private use, a compliance agreement must be in place. The information as to where and what is being removed, how it will be transported, specifically where it will be moved to, and during what time period should be included in the harvest plan if the plan will act as the compliance agreement. If this information is not included in the plan, a separate compliance agreement will be necessary prior to movement of host material. In addition to the compliance agreement, contractors removing firewood on the Forest must still have the required firewood permit.

b. Commercial Harvest On An Infested Site Where Infected Trees Will Be Harvested:

- State and Federal regulations apply. Host material cannot leave the site except as authorized by the County Agricultural Commissioner and/or mitigation measures specified in the approved harvest document. Infected host material (especially foliage) and contaminated soil could be picked-up on logging equipment and transferred to other sites. Mitigation measures to minimize the unintended movement of host material are required. Forest staff or contractors shall do inspection of loads of logs and equipment leaving the site to ensure that no host material is being transported without a permit. This may require cleaning dirt and mud from the vehicle to remove host plant material contained in the dirt or mud, depending on conditions when the timber harvest is conducted.
- If firewood from host material is being removed from the site for commercial or private use, a compliance agreement must be in place in addition to the required firewood permit. The information as to where and what is being removed, how it will be transported, specifically where it will be moved to, and during what time period, should be included in the harvest plan if the plan will act as the compliance agreement. If this information is not included in the plan, a separate compliance agreement will be necessary prior to movement of host material.
- In the regulated area, the collection of minor special forest products that are known host plants will be restricted to areas where the "free-from" protocol has been implemented, or where a compliance agreement is in place.

3. Should SOD be identified on JDSF lands, Management Practices to minimize the unintended movement of host material from infested areas include:

a. The RPF shall inform personnel that they are working in an SOD-infested area, unauthorized movement of plant material is prohibited, and the intent of the mitigation measures is to prevent disease spread (914 CCR 1035.2).

b. If some sites in the general operating area are found to be disease-free of have a low incidence of disease, initiate and complete operations on these sites before moving to more heavily infested sites.

c. To the extent practical, locate landings, log decks, logging roads, tractor roads, and other sites of equipment activity away from host plants, especially areas with disease symptoms.

d. Route equipment away from host plants and trees, especially areas with disease symptoms.

e. The equipment or vehicles must be inspected for host plant debris (leaves, twigs, and branches each time equipment or vehicles leave the site. Host plant debris must be removed from the equipment and vehicles prior to their departure. This applies to all equipment and vehicles associated with the operation, including logging equipment, log-hauling trucks, pick-up trucks, employee's personal vehicles, etc. An exception will be granted for equipment or vehicles that leave the site temporarily and will not be traveling to uninfested areas prior to their return.

f. In addition to following California Department of Fish and Game (CDFG) drafting guidelines (intake mesh size, etc.), water should not be drafted from a watercourse in a SOD-infected drainage and used in an uninfested area. This is because sporangia from infected leaves (or minute parts of infected leaves), themselves in the watercourse, could be suctioned in the draft and transported to new areas. Infection could be possible if abatement over-spraying landed on susceptible hosts.

4. Management Practices to minimize the unintended movement of soil and host material from infested areas (these practices are not specifically required for operations on infested sites, but the RPF must state and justify what practices will be used to minimize the unintended movement of infested host material):

   a. The SOD fungus resides in soil and duff in infested areas and soil / duff is therefore a potential carrier of the disease. The greatest threat of disease spread occurs when wet soil is present. Soil movement should be addressed.

   b. Because wet soil and mud will readily adhere to vehicles, equipment, and boots: conduct operations during the dry season; utilize paved and rocked roads and landings to the extent possible.

   c. After working in an infested area, remove or wash off accumulations of soil, mud, and organic debris from shoes, boots, vehicles and heavy equipment, etc. before traveling to an area that is not infested with SOD. Consider establishing an equipment power wash station. The station should be:

      - Located within the generally infested area.
      - Paved or rocked.
      - Well-drained so that vehicles exiting the station do not become recontaminated by the wash water.
      - Located where wash water and displaced soil does not have the potential to carry fines to a watercourse (see "Saturated Soil Conditions" in 14 CCR 895.1).

   d. Pay particular attention to sites where soil and organic debris may accumulate.

5. Management Practices should Pitch Canker be identified on JDSF lands:

   a. The timely removal and disposal of trees dying from pitch canker may help prevent the buildup of destructive beetles which can attack other trees, and can carry the pitch canker pathogen to uninfected trees. The disposal of pitch canker diseased material should be done on-site so as not to spread the disease to uninfested areas. Limbs and small pieces of wood may be left on-site or they may be chipped or burned. Logs cut from pitch canker diseased trees may be split for firewood for local use, but the wood should be seasoned beneath a tightly sealed, clear plastic tarp to prevent the buildup of destructive insects. California Department of Forestry and Fire Protection Tree Note #3, Controlling Bark Beetles in Wood Residue and Firewood, provides specific guidelines

for placing tarps over and around firewood. Do not stack pine firewood next to living pine trees or transport it to uninfested areas (Sanford, 1996).

b. The distribution of the disease is discontinuous; thus, there are infested as well as uninfested areas within the Zone of Infestation (at the time this document was prepared, pitch canker was not known to occur on JDSF). The Pitch Canker Task Force of the California Forest Pest Council and CDF have ongoing monitoring underway for the disease. JDSF staff should report any symptomatic Bishop pines to the Task Force for determination of presence of pitch canker. CDF and the Mendocino County Agricultural Commissioner shall be notified immediately in the event that pitch canker is found on JDSF.

c. Directions for Registered Professional Foresters and Licensed Timber Operators:

- Know when you are working within an infested area.
- The California Department of Forestry and Fire Protection (CDF) has the authority to impose conditions on the commercial harvest of trees from timberland within the Zone of Infestation. Such actions are to be carried out on a case-by-case basis and depend upon the harvest operation's potential to contribute to disease spread. For all timber operations regulated by the Department, the Department must be informed if pitch canker is present within the operating area.
- Do not transport infected or contaminated material to areas that are free of the disease.
- When cutting or pruning a diseased tree, clean tools with a disinfectant before using them in uninfested areas. Lysol® is an effective sterilizer. Make sure that clients and co-workers are aware of these guidelines (Pitch Canker Task Force, 2000a).

d. Directions for Firewood Cutters:

- JDSF personnel should be kept informed whether pitch canker is determined to be present on the Forest. Any suspect areas shall be avoided for firewood harvest until an official determination is made as to presence or not of the disease. At time of firewood permit issuance, JDSF personnel shall direct firewood cutters to disease-free areas of the Forest. Information on pitch canker disease recognition and regulations shall be provided with the collection permit in the event that pitch canker becomes present on the Forest.
- Tools and machinery that are to cut trees with pitch canker disease WILL BECOME CONTAMINATED with the pitch canker fungus. There is little chance of spreading pitch canker if contaminated tools are only used on dead trees or on trees that are not pines. However, if contaminated tools or machinery will be used on living pines, the tools should be cleaned and sterilized before use on uninfected trees or in uninfested areas. Lysol® is a suitable sterilizer for this purpose. A logical alternative to repeated cleaning of equipment is to reserve one set of equipment for use only in infested areas, and another set for use only in uninfested areas.

- Do not transport pine firewood out of infested counties (Mendocino County is an infested county). Sell pine firewood locally, for local use guidelines (Pitch Canker Task Force, 2000a).

e. Directions for Other Forest Product Harvesters:

- JDSF personnel, at time of collecting permit issuance shall direct collectors to disease-free areas of the Forest. Information on pitch canker disease recognition and regulations shall be provided with the collection permit.
- Collectors shall not be permitted to remove pine products from trees infested with pitch canker disease.

f. Directions for Reforestation in Areas Affected by Pitch Canker:

- Material for replanting should be as local in origin as possible to retain the genetic integrity of the local population (Pitch Canker Task Force, 2000b).
- Option 1. The preferred strategy for reestablishing Bishop pine would be to allow natural regeneration to occur. Site improvement to encourage regeneration may be required where a dense overstory precludes the development of a seedling stand. Where natural regeneration does occur, it can be expected that pitch canker will eventually infect some or most of the young trees. However, the trees will vary in their susceptibility and some may sustain little or no damage. This is the least intrusive approach to reforestation, with the possibility that a level of pitch canker resistance will be attained that eventually provides the desired density of mature trees (Pitch Canker Task Force, 2000b).
- Option 2. If option one is acceptable in principle but there is insufficient seed to produce a stand, locally collected seed could be introduced. By collecting seed from asymptomatic trees, there is more likelihood that some are resistant, and a certain percentage of the progeny will carry this trait as well. It is thought that a small percentage of resistant individuals may be sufficient to establish a stand. To diversify the seed source, it is recommended that seed be gathered from: (1) multiple trees, at least 100 meters apart where possible, (2) trees of differing ages, and (3) different heights within the same tree. Trees that have been planted should be avoided, as they may be non-local in origin. In addition, trees with evidence of disease or poor health should not be used as a seed source (Pitch Canker Task Force, 2000b).
- Option 3. The least desirable measure for maintaining Bishop pine presence is to transplant known resistant seedlings from a reputable source. The potential loss of genetic integrity could result in a nonnative stand (Pitch Canker Task Force, 2000b).

Section II

General Responses

The purpose of this section is to display responses to the most common, critical, and substantive issues raised by the public during the comment period for the DEIR. The comments are first summarized and then addressed with responses that were compiled by the appropriate author of each resource-specific section of the DEIR. The General Responses are referenced in response to individual letters, form letters, agency letters, and oral comment.

General Response 1. General Support or Lack of Support for Proposed Management Plan

Summary of Public Comments: Comments address a difference of or shared opinion with the proposed management methods in the Jackson Demonstration State Draft Forest Management Plan (DFMP) and do not directly apply to the impacts analysis conducted in DEIR. A wide variety of comments are addressed by the response to this general comment. Comments ranged from a general approval or disapproval of timber harvest of any sort on JDSF to recommendations for increased recreation opportunities. All comments of general support or general lack of support for the proposed DFMP are referred to this general response.

Response to Comment: The purpose of the DEIR is to analyze the environmental impacts of a particular project, in this case the DFMP. The DEIR addresses or dismisses from consideration several alternatives to the proposed action in the alternatives analysis section (DEIR Section VI Alternatives, pages 57-77), which may be of use in determining why other management actions were not part of the proposed action. Comments regarding the specific content of the DFMP were noted or briefly addressed, but are generally beyond the scope of CEQA required responses to comments.

General Response 2: Insufficient Alternatives Analysis and Threshold of Significance Related Comments

Summary of Public Comments: Comments generally debate the significance of environmental impacts related to the project. Most comments of this nature claim a significant impact on a certain resource will result from an action in the DFMP, but generally lack supporting evidence for the claim. Some comments suggest that the consideration of other methods of impact analysis or existing resource studies may change the impact analysis in the DEIR.

Comments that generally recommend an additional alternative for analysis, but lack specific reasoning or evidence for doing so are also referred to this general response.

Response to Comment: CEQA provides the Lead Agency, CDF in this case, the authority to determine “threshold of significance” for impacts on environmental resources based upon

qualitative or quantitative standards. Compliance with existing regulatory standards generally results in less than significant impacts to resources. CEQA Guidelines, Section 15064.7, Subdivision (h) guides the Lead Agency to "rely on the vast body of regulatory standards" that have already undergone rigorous public agency review in determining thresholds and significant impacts. Subdivision (h), however, also establishes flexibility for the Lead Agency to establish whether existing regulatory standards are sufficient to protect an environmental resource from any significant impact that may result from the proposed project. The basis for the Lead Agency's determination of whether a standard applies in a particular case must be based on "substantial evidence in the record that [the] standard is inappropriate to determine the significance of an effect." The Lead Agency is not required to base their determination of applicable standards on information presented by project opponents that a standard is or is not appropriate or effective to protect a resource.

The DEIR is a comprehensive environmental analysis completed by professionals in their fields. It cannot hope to, and is not required to use every known method of analysis or analyze every imaginable alternative (CEQA Guidelines sec. 15088, 15204). The DEIR was completed in good faith and represents full disclosure of environmental impacts using the best available scientific information.

General Response 3: CDF Did Not Accept E-mail Comments from the Public

Summary of Public Comments: Comments express dissatisfaction with the CDF decision not to accept emailed public comment.

Response to Comment: The public notice that initiated the public comment period for the JDSF DEIR clearly stated that all comments must be submitted in writing. Although CDF is allowed to accept email comments, the choice was made not to do so because of the difficulty in authenticating such responses. In most cases, emailed comments were replied to by CDF with an indication of proper comment format. A vast majority of emailed comments were sent in hardcopy to CDF and were entered into the public record. These comments received responses that are located in FEIR Section III.

General Response 4: Old Growth Concerns

Summary of Public Comments: In general, there is support for old growth protection measures included in the DFMP, but they did not go far enough. Specifically, the comments indicated the DEIR should have identified that harvest of any old growth tree would result in a significant environmental impact.

Response to Comment: It is not reasonable to include a mitigation measure that would require every old growth tree be retained regardless of all other considerations. The DFMP provides protection measures to minimize impacts to old growth trees to less than significant, while

allowing for the consideration of public safety and resources such as water quality and slope stability. It is not reasonable to increase the risk of impacting water quality or slope stability to protect a single tree, when the removal of that tree will not result in a significant environmental impact. The desire to retain all old growth trees is a strongly held opinion by many people, but it is not required to reduce impacts to less than significant.

General Response 5: Marbled Murrelet

Summary of Public Comments: The comments pertaining to Marbled Murrelets (MAMU) included:

- The DEIR did not correctly characterize the status of MAMU in adjacent Russian Gulch State Park,
- The DEIR did not mention the Federal Recovery plan for MAMU or provide a discussion of the Federal critical habitat designation of JDSF,
- The DFMP does not provide for the recovery of MAMU as required by CESA.

Response to Comment: The results of the CNDDB query completed in preparation of this document (See page 225 of the DEIR) did not indicate that murrelets occur in the vicinity of Russian Gulch State Park. However, based on the new information provided in the comments to the DEIR and through discussion with Rene Pasquinelli (Senior Park Ecologist) of the Russian Gulch State Park, the language of the first paragraph on page 248 was incomplete. The following paragraph presents additional information to that portion on the DEIR:

> ***There have been numerous inland detections near JDSF. The first detection was in Russian Gulch State Park in 1976 (Paton and Ralph 1988), and the second detection was apparently 1km (0.6mi.) east of the town of Mendocino in 1988 (F. Sharpe, personal communication, as cited in Paton and Ralph 1988). According to Rene Pasquinelli (Personal communication), surveys completed annually over the last five years within Russian Gulch State Park have detected numerous murrelets flying up the Russian Gulch drainage, including "occupied behavior" type observations. Although no nest trees have been identified, this information suggests that murrelets are nesting in the Russian Gulch State Park.***

Additionally, the following sentence adds to the information contained in the second paragraph on page 248 of the DEIR: "***However, potential murrelet habitat was identified by Ken Hoffman (USFWS) on former G-P lands in the vicinity of the Mendocino Woodlands Recreation Area (R. Pasquinelli, Personal Communication)***."

The DEIR presents information on the existing conditions of JDSF in relation to Marbled Murrelet (MAMU) presence and potential habitat that may support MAMU. A discussion regarding the decline of murrelets and their habitat in the region is also included. A discussion

on the current regulatory framework is provided indicating that USFWS must be consulted where it is likely that a project could affect federally listed species. For the purpose of clarification, the DEIR should also have stated that DFG must also be consulted where it is likely that a project could affect federally listed species.

All stands occupied by murrelets, and potential habitat for murrelets, including Russian Gulch State Park, will be protected and/or provided buffers on a project basis through consultation with CDFG.

Standard protection buffers for stands occupied by murrelets include:

- 300-foot "No Cut" zone
- Consultation with DFG is required when operations are proposed to occur within 0.25 miles of potential habitat, extending to 0.5 if helicopter yarding is planned.

As described in the FPR, State Park Special Treatment Buffers shall be a minimum of 200 feet.

An evaluation of the DFMP in light of the existing conditions and regulatory framework was completed to determine if implementation of the FMP would result is significant impacts to MAMU or potential MAMU habitat. A determination was made that the implementation of the FMP would not result in significant impacts to MAMU or potential MAMU habitat. Utilizing JDSF to provide for the recovery on MAMU was not included as part of the proposed action or as an alternative considered in detail. Page 58 of the DEIR contains the rational for not considering this alternative in detail.

The Federal Recovery plan for MAMU is referenced on page 244 of the DEIR, and a discussion of the critical habitat designation is provided starting on page 247. As stated in the DEIR, a federal agency that authorizes, funds or implements an action must consult with USFWS to ensure that the action will not adversely modify the critical habitat. Since the implementation of the FMP is a State action, the federal recovery plan and critical habitat designation are not applicable.

After analyzing the DEIR MAMU protection measures, old growth protection measures and late seral development strategies in the DFMP, the DEIR found that the proposed action would not result in significant impacts to MAMU, will protect existing habitat and lead to the development of new habitat over time. This will contribute to the recovery of the species as required in CESA.

In response to comments requesting additional protection for the timber stands within Russian Gulch, CDF will designate a research/demonstration area within the Russian Gulch watershed where management practices will be used to accelerate the recruitment of late-seral forest conditions. The area, consisting of approximately 450 acres, will use silvicultural stand management with the specific intention to accelerate the development of large trees with appropriate canopy closure and other habitat features to increase future marbled murrelet

habitat. CDF will consult with the US Fish and Wildlife Service and the California Department of Fish and Game on the development of appropriate silvicultural prescriptions to be applied in this area.

The designated area for this research / demonstration effort shares a border with the Woodlands Special Treatment Area near Road 408, creating a potential future flyway consisting of contiguous late-seral forest habitat.

General Response 6: Program DEIR Limits Ability to Analyze Impacts of Specific Projects

Summary of Public Comments: Comments recognize a lack of consideration of impacts of particular timber harvest plans and specific projects.

Response to Comment: The JDSF DEIR is a Program DEIR. A Program DEIR is intended to analyze the broad impacts of an action that will receive additional environmental review as specific projects are carried out. In the case of the JDSF DFMP, further CEQA equivalent review will occur on specific timber harvest projects.

The DFMP is a general management plan for JDSF and was analyzed as such in the DEIR. Although there are many specific policies within the DFMP, it allows for a high degree of adaptive management. Specific adaptive management procedures will receive CEQA equivalent environmental review under the THP process (DEIR, p. 49).

General Response 7: Late Seral and Mature Young Growth Concerns

Summary of Public Comments: A general concern expressed in many comments is that the DEIR did not find that the late seral management measures included in the DFMP adequate to prevent significant environmental effects to late seral habitat.

The two main issues are:

- The late seral development areas will not be effective in achieving the goal of providing late seral habitat, and;

- The DFMP does not provide protection for mature young growth outside of the late seral management areas that may already be providing late seral habitat.

A related issue is the commonly expressed opinion that the existing mature young growth on JDSF is a significant resource independent of any late seral habitat that it may provide, and that harvesting mature young growth would result in a significant environmental impact.

Response to Comment: The JDSF DFMP addresses late seral forests at several levels. Specific areas in the Forest are identified and mapped as Special Concern Areas (SCA) that will be managed for the development of late seral forest. Please refer to page 47 of the DFMP for a list of areas and estimated acreage. Late seral habitat development will be provided by either no harvesting to allow stands to develop in a non-managed state, or by understory thinning, selective harvest or other management activities designed to promote late seral characteristics. The DEIR found that about 20% of JDSF will be included in these areas including a large contiguous block in the Mendocino Woodlands STA, areas adjacent to three of the old growth groves and along the class I and II watercourses. Contrary to many comments, the late seral development areas associated with Class I and II watercourse will not be a thin strip of habitat isolated from upslope habitat. Although this may occur in limited instances, the vast majority of the class I and II watercourse late seral development areas will be bordered by a mosaic of timbered hillslopes providing for habitat connectivity. The DEIR found that the proposed late seral management practices proposed for the late seral forest development areas will protect late seral habitat that may currently exist in those areas and will provide for the development of additional late seral habitat.

In addition to these specific areas, there are other general areas that will be managed with consideration for development of late seral characteristics. On page 46 of the DFMP, the Plan indicates that uneven-age management will eventually produce stands with some degree of late seral elements or conditions. In the adaptive management section of the Plan, Timber Resources Goal 1 is to increase late seral forest conditions. In Appendix II – Detailed Goals and Objectives, one of the objectives under Goal 4 – Forest Restoration is to increase late seral forest. The DFMP also includes retention standards for snags and down logs, which are important characteristics of late seral habitat.

Taken together, the Plan proposes to manage specific areas for late seral forest development, but also consider the development of late seral forest characteristics, especially in the uneven-age management areas. The Executive Summary section (page iii), the Plan indicates that "***The Forest has grown to include mature second-growth timber stands, and the maturity of the forest will continue to develop through the preservation of unique stand elements and promotion of sustainable recruitment of late-seral elements***." The potential for JDSF to promote the development late seral forest outside of the late seral development areas is tempered by the statement on page 29 that indicates late seral restoration has not be adopted as the primary mandate for JDSF, but existing old-growth and other areas of second-growth will be managed to expand the area of late seral forest. While not all of the uneven-aged management areas will be managed for the development of late seral forest, retention of late seral characteristics will be a significant goal, with the objective of retaining late seral forest characteristics and increasing late seral forest habitat across JDSF.

With this framework established in the DFMP, the DEIR analyzed the potential for the Plan to cause significant environmental effects by significantly reducing late seral habitat outside of the late seral development areas. In DEIR section 6.6.5 Wildlife Project Impacts, the DEIR found that although it is likely that some stands included in the acreage estimated as potential late seral habitat will be harvested during the life of the plan, the actual amount is unknown. This is

due to two factors. The first is that actual harvest areas are not known at this time. The short-term harvest schedule provides a projection of general areas that will be harvested, but the final harvest boundaries are not known at this time and would require substantial speculation to attempt to delineate them. The second factor is the lack of spatial accuracy of the seral stage classification of forest habitat in JDSF. The DEIR estimation of late seral habitat present on JDSF is based on an analysis of the estimated WHR types on the Forest. As described in the EIR, the estimation of area occupied by WHR types was developed by converting the JDSF vegetation types to WHR types through use of a crosswalk table. Although potentially confusing at first glance, crosswalk tables are a commonly used method of converting timber or vegetation types to WHR types. This conversion process resulted in a reasonable estimation of WHR type available across the entire forest, but does not produce results such that individual stands can be identified as late seral habitat. While forest seral stages as they exist in the field can be provided with a corresponding WHR classification, the WHR system cannot be used to alone to identify late-seral habitat. Furthermore, the DEIR emphasized that the numbers presented were estimates and that final classification as late seral habitat would require field evaluation. Given these parameters, the DEIR indicated that it is not feasible to determine how much late seral habitat will be harvested in the next 5 or 10 years. In addition, this precludes the production of a meaningful map that shows the locations of WHR types or late seral stands.

Even with these uncertainties, the DEIR found that the DFMP would not result in a significant environmental effect relating to a decrease in the availability of late seral habitat. One of the primary factors supporting this finding is that the FPRs address the potential harvest of late seral habitat. Compliance with the FPRs would minimize impacts on existing late seral habitat. Furthermore, the DEIR found that by minimizing impacts to existing late seral habitat, providing for retention of late seral habitat characteristics during harvest, and specifically managing about 20% of the Forest for the development of late seral habitat, the DFMP would have a beneficial impact on late seral habitat. This is with the understanding that the Forest is a dynamic place composed of a mosaic of age classes. As younger age classes mature, the DFMP will provide for retention of late seral forest characteristics, and the development of late seral forest.

Since the goals and objectives of the plan include the development of late seral forest, the Thornburgh analysis is provided to evaluate how uneven-age management would affect the development of a relatively young forest into a late seral forest. This analysis indicated that in the short-term late seral development would be minimal, but over the long-term, development would have significantly progressed. It is interesting to note that, based on the Thornburgh analysis, the group selection areas have the best potential for late seral development due in part to the development of gaps in the canopy that encourages the development of viable new age classes.

As previously stated, the DEIR found that the DFMP provisions to manage for late seral habitat would prevent an adverse impact and would actually provide a beneficial impact on late seral habitat—this would be both direct impacts and cumulative impacts. The general concept put foreword in some comments is that that JDSF should not harvest mature young-growth because other landowners in the region have harvested substantial areas of mature young-growth. This

concept is based on the assumption that harvesting mature young-growth on JDSF would result in a significant cumulative impact. Section 15130(a)(3) of the CEQA guidelines indicates that if a project contributes its fair share of a mitigation measure designed to alleviate a cumulative impact, then the project's contribution to cumulative impacts is less than significant. The management direction provided in the DFMP will ensure that JDSF continues to contribute, at a minimum, its fair share of mature young-growth to the general region. The concept that harvesting mature young-growth forest in, and of itself, is a significant environmental impact is not supported by the FPR. On lands zoned for timber production, the FPRs indicate that timber harvesting and compatible uses are to be expected and will occur on such lands, and that the harvesting per se of trees shall not be presumed to have a significant adverse impact on the environment (14 CCR 897 (a) and 898). This means that if the impacts of timber harvesting have been considered and found to be less than significant, then the act of harvesting the trees cannot be considered a significant impact. Furthermore, the FPRs establish minimum ages for harvest using even-aged management that require harvesting mature timber, and the MSP standards require mature stands to be grown and harvested.

General Response 8: Clear cutting and Even-Aged Management

Summary of Public Comments: The comments generally express disagreement with the even-age management and clear cutting proposed in the DFMP. Some comments go on to fault the DEIR for not concluding that clear cutting would result in significant environmental effects. Many comments indicate that there are large areas already clearcut that should be used for research, rather than cutting more areas. Others indicate that there are no benefits to be gained from additional clear cutting for research and demonstration.

Response to Comment: Even-aged management has specific economic and silviculture advantages that make it a valuable silvicultural method in the redwood region. This silvicultural method will continue to be widely used by both small and large landowners. Developing alternative even-age silvicultural practices that maintain the economic and silvicultural advantages, while minimizing environmental impacts would be a significant achievement. JDSF is the only ownership in the redwood region where this sort of information can be developed.

The dense mature second growth forest present on JDSF is the product of historic clear cutting on a broad scale as described in the DEIR. In more recent times, clear cutting has steadily declined as a silvicultural method within JDSF. Table 21 on DEIR page 161 indicates that 1,913 acres have been clearcut on JDSF since 1980. This is less than 4% of JDSF. The majority of the clear cutting occurred prior to 1990, with less than 300 acres of clear cutting since 1990. This does not appear to represent large tracts of recently clearcut land. One of the goals of JDSF is to maintain a diverse range of timber and habitat conditions, including some clearcut areas, to promote a diverse research program.

The DFMP provides a description of the desired future condition of the even-age management areas. It is expected that approximately 15 percent of the Forest (about half of the even-aged

area, or 7,128 acres) will be covered by stands that are less than 50 years of age at the end of a one hundred year period. Approximately 15 percent of the Forest will be occupied by even-aged stands between 50 and 150 years of age. Even-aged management as practiced on the Jackson Demonstration State Forest will generally produce two-storied stands, consisting of a main canopy layer of trees grown to the designated rotation age, and an overstory of a few to several trees per acre retained from the previous stand to provide a legacy of wildlife habitat elements.

Some comments pointed out that nearby industrial timberlands are "demonstrating" clear cutting, so there is no need for JDSF to demonstrate this method. However, the industrial lands are not demonstrating, they are utilizing the method. Their focus is on maximizing the economic and silvicultural benefits of the method rather than developing alternative even-aged methods. In addition, industrial owners are unlikely to commit tracts of land to long-term research as is required to demonstrate a silvicultural method.

So what can be demonstrated or researched in even-aged management areas? The demonstration of various rotation ages and structure tree retention levels as proposed in the DFMP will be beneficial for many landowners in the redwood region. Examples of what could be learned from the continued use of the even-aged silvicultural system as proposed in the DFMP include determining the most advantageous arrangement or orientation of retained structure trees. Others are: What wildlife species use clumped trees verses single widely spaced trees? What is the best size clump of trees to leave? How does slope and aspect affect wildlife use of retained structure? How does retained structure affect tree growth and stand development? What are the long-term affects or watershed scale effects of even-age management with structure tree retention verses uneven-aged management? Can retention of structure trees mitigate visual impacts of clear cutting? These sorts of questions can only be answered if even-aged management areas are included in the management of JDSF.

Numerous wildlife species, including many species of special concern, use clearcuts and other forest openings to fulfill one or more of their biological requirements. While extensive clearcuts that were part of the past were detrimental to many species because they removed extensive blocks of habitat and most key elements, clearcuts in today's environment are of value as long as other forested habitats, including late successional habitats, are provided in the vicinity. The primary prey item of the spotted owl in coastal California is the woodrat, a species that is found in abundance within young stands similar to those produced within a few years after clear cutting. Spotted owls still require large patches of mature forests containing trees with cavities for nesting, but they also benefit from stand conditions produced by even-aged management techniques, including clear cutting. The purple martin, a California Species of Special Concern, prefers to nest in large snags located within forest openings. Although few sensitive species nest in clearcuts, many prey items and hunting opportunities occur in and along the edges of clearcuts. At the landscape level, maintenance of diverse habitats while retaining key habitat elements, such as snags and old growth, is beneficial to most species.

The impacts of the DFMP proposed even-aged management, including clear cutting, were assessed in the DEIR. The DEIR found that, as proposed in the DFMP and mitigated in the EIR,

even-age management would not have a significant impact on the environment. Mitigations were developed to address visual impacts of clear cutting. While there were other mitigations developed for harvest operations in general, no other mitigations were necessary to prevent or minimize the impacts of clear cutting. Although many members of the public may have an unfavorable opinion of clear cutting, the DEIR analysis indicates that when appropriately designed and mitigated, clear cutting does not have a significant effect on the environment.

General Response 9: DEIR Lacks Sufficient Cumulative Impacts Analysis

Summary of Public Comments: Comments suggest inadequate consideration of cumulative impacts or claim that the DEIR completely lacks an analysis of cumulative impacts.

Response to Comment: Cumulative impacts are indeed a very important part of this and any program EIR. Section 15130 of the CEQA Guidelines requires that cumulative impacts be addressed in all EIRs.

The JDSF DEIR analyzed and presented cumulative impacts as a part of each appropriate resource specific section, but did not include a distinct cumulative impacts section. The following summary gathers information on past, present, and future projects and assembles the existing cumulative impacts analysis from resource specific sections of the DEIR for ease of review by readers. Cross-references are provided to the discussions of the subjects in the DEIR with page or section numbers.

Past, Present and Future Cumulative Impacts Summary

Section 15103 of the CEQA Guidelines requires that an EIR must identify potentially significant cumulative impacts. Cumulative impacts analysis allows for the joint assessment of past, present, and reasonably foreseeable future projects related to the proposed action.

Past, present, and foreseeable future projects in the area that may cause DFMP impacts to be significant cumulative impacts are generally limited to other logging activities, road construction, or development. A comprehensive list of those past, present, and reasonably foreseeable projects that were taken into account in the DEIR for analysis of cumulative impacts is provided as Appendix 13.

Cumulative Impacts On Resources

The resource categories discussed below were found to have some potential for cumulative impacts without mitigation. Mitigation measures to limit cumulative impacts to a less than significant level are provided.

Cumulative Impacts On Aquatic Resources

The cumulative impacts to aquatic resources that may result from the proposed project include:

- Increased water temperature resulting from reduced in stream shading
- Increased sedimentation resulting from increased erosion
- Reduced recruitment of LWD
- Alteration of flow patterns resulting from changes in runoff characteristics
- Changes in stream channel geomorphology
- Changes in streamside vegetation
- Blockage of fish migration at stream crossings or other barriers

These types of changes in aquatic habitat conditions have been identified as factors in the decline of salmonid populations.

In CEQA terminology, this situation may be described as an adverse cumulative condition resulting from the impact of past projects related in a variety of ways. Populations of Steelhead and Coho salmon are generally recognized to be at levels well below those remembered from fifty to seventy years ago. A variety of factors have been suspected of contributing to the decline. These include changes in ocean fishing and ocean temperatures, increased river mouth predation, sedimentation of spawning gravels, loss of sheltering pools due to the removal of large woody debris and the down cutting of channels, warming of water due to the loss of shade along streams, reduction in food supplies from reduction of overhanging streamside vegetation, and other factors.

Some of these effects resulted from past timber harvesting activities through cutting and removal of trees and constructing roads. The removal of large woody debris resulted from the misguided but well-intentioned effort to improve stream conditions for fisheries. Other activities such as ocean and sport fishing are related only through impacts on a common resource. Debates have raged over the relative importance of the various factors. But this EIR limits its examination to factors over which CDF's management of JDSF may exercise some influence.

The project's contribution to cumulative impacts will be less than considerable based on the project design and the proposed mitigation. As discussed in the project impacts section for Aquatic Resources (section 6.1.6), impacts to aquatic resources have been mitigated to a less than significant level and are likely to lead to improved in-stream habitat conditions and improved fish population numbers. Habitat protection measures incorporated into the design of the proposed project are discussed in EIR sections 6.1.3 (Habitat Protection) and 6.1.4 (Monitoring and Adaptive Management). Examples of the protection measures are:

- Class I and II WLPZs will be managed to promote late-seral forest conditions
- WLPZs will include no harvest zones, or limited entry to improve salmonid habitat
- Overstory canopy cover will be maintained at high levels to provide shade cover

- Class I and II WLPZs will retain a minimize of 240 sq. ft. per acre of conifer basal area, and ten largest conifers per 330 feet of stream channel will be retained within 50 feet of the watercourse transition line
- With limited exceptions, salvage of dead or dying trees and retention of native hardwoods will not be permitted in WLPZs
- A road management plan will be implemented to minimize sediment production and delivery to watercourses
- Hillslope management guidelines are provided to address slope stability concerns

Mitigation measures 1 and 2 for aquatic resources resulting from the EIR process are included in EIR section 6.1.6 (Project Impacts). These mitigation measures are designed to ensure that sufficient levels of LWD are present in watercourses prior to harvesting, or provide for LWD recruitment if the LWD levels are below target levels.

When the current conditions are viewed in light of past projects, other current projects, and reasonably anticipated future projects, CDF believes that the effects of the proposed management plan will not contribute to a further degradation of the aquatic resources and will contribute to improvements in those resources. As explained more fully in the EIR, current timber harvesting plans are being conducted under greatly tightened controls through the Forest Practice Rules and the lessening and avoidance of impacts of individual THPs through CEQA review and analysis with other agencies. Areas along streams are being protected, and areas to be harvested are located farther away from streams than in the past. These actions should reduce erosion near streams; allow filtering of sediments in the forest floor litter between harvesting areas and streams; and result in the return of woody debris to the streams. Improved road management and the careful abandonment of old roads are expected to result in important reductions in erosion from road surfaces and stream crossings. The relocation of roads from along streams to ridge tops and the change to out-sloping of road surfaces is already reducing road caused sedimentation. Future projects that comply with the new management plan are expected to result in further improvements to aquatic resources.

Given the management practices included in the proposed project and the proposed mitigation measures developed through the EIR process, the proposed project will not result in a considerable contribution to cumulative impacts on aquatic resources.

<u>Cumulative Impacts On Wetlands</u>

Implementation of the Forest Management Plan when considered with past, present and reasonably foreseeable future projects will not result in significant impacts to wetlands. Protection to wetlands will be provided on a project or management activity basis. Direct impacts such as removal, filling or hydrologic interruption will be avoided and indirect impacts such as increased sedimentation will be minimized through the sediment reduction practices included in the Forest Management Plan. The proposed project will not result in a considerable contribution to cumulative impacts on wetlands.

Cumulative Impacts on Late Successional Forest, Snags, Down Wood, Hardwoods, Riparian, and Other Unique/Special Habitats and Features

The project's contribution to cumulative impacts will be less than significant based on the project design and proposed mitigation. As discussed in the project impacts section for Aquatic Resources (section 6.1.6), and Wildlife Resources (section 6.6.5), impacts to aquatic and wildlife resources have been mitigated to a less than significant level. Habitat protection measures incorporated into the design of the proposed project are discussed in EIR sections: 6.1.3 – Habitat Protection, 6.1.4 – Monitoring and Adaptive Management, 6.6.3 – Project Measures for Protection of Resources, and 6.6.6 – Mitigation and Monitoring.

Cumulative Impacts on Wildlife Communities, Neotropical Birds, and Game Species

The project's contribution to cumulative impacts will be less than significant based on the project design and proposed mitigation. As discussed in the project impacts sections for Wildlife Resources (section 6.6.5) and Aquatic Resources (section 6.1.6), impacts to aquatic and wildlife resources have been mitigated to a less than significant level. Habitat protection measures incorporated into the design of the proposed project are discussed in EIR sections: 6.1.3 (Habitat Protection), 6.1.4 (Monitoring and Adaptive Management), 6.6.3 (Project Measures for Protection of Resources), and 6.6.6 (Mitigation and Monitoring).

Cumulative Impacts on the Lotis Blue Butterfly

The project's contribution to cumulative impacts will be less than significant based on the project design and proposed mitigation. As discussed in the project impact sections for Wildlife Resources (section 6.6.5) and Botanical Resources (6.2.6), impacts to pygmy forest and ***sphagnum*** bogs have been mitigated to a less than significant level. Habitat and species protection measures incorporated into the design of the proposed project are discussed in EIR sections: 6.2.3 (Project Measures for Protection of Botanical Resources), 6.2.4 (Specific Management Actions), and 6.6.3 (Project Measures for Protection of Resources).

Cumulative Impacts on Southern Torrent Salamander, Tailed Frog, Northern Red-legged Frog, Foothill Yellow-legged Frog, and Northwestern Pond Turtle

The project's contribution to cumulative impacts will be less than significant based on the project design and proposed mitigation. As discussed in the project impacts sections for Wildlife Resources (section 6.6.5) and Aquatic Resources (section 6.1.6), impacts to aquatic and wildlife resources have been mitigated to a less than significant level and are likely to lead to improved instream and riparian habitat conditions. Habitat protection measures incorporated into the design of the proposed project are discussed in EIR sections: 6.1.3 (Habitat Protection), 6.1.4 (Monitoring and Adaptive Management), 6.6.3 (Project Measures for Protection of Resources), and 6.6.6 (Mitigation and Monitoring).

Cumulative Impacts on Northern Goshawk, Cooper's Hawk, Bald Eagle, Golden Eagle, Osprey, Peregrine Falcon, Marbled Murrelet, Northern Spotted Owl, Vaux's Swift, Purple Martin, Yellow Warbler, Olive-Sided Flycatcher, and Pacific Fisher

The project's contribution to cumulative impacts will be less than significant based on the project design and proposed mitigation. As discussed in the project impacts section for Wildlife Resources (section 6.6.5), impacts to wildlife resources have been mitigated to a less than significant level. Habitat protection measures incorporated into the design of the proposed project are discussed in EIR sections: 6.6.3 (Project Measures for Protection of Resources) and 6.6.6 (Mitigation and Monitoring).

Cumulative Impacts On Geologic and Soil Conditions

Potential adverse cumulative effects associated with the proposed Forest Management Plan reflect the impacts associated with continued land management practices past, present, and future within JDSF itself, in combination with those that have occurred, are occurring, or may occur in the future in interconnected watersheds outside JDSF. From a geologic standpoint, significant adverse impacts are typically those associated with increases in the rates of landsliding and erosion that deliver sediment to watercourses. The fact that watersheds in JDSF and in the vicinity are listed by the E.P.A. as sediment impaired under Section 303 (d) of the Clean Water Act suggests that significant adverse cumulative effects have occurred in the region due to past management practices, and that there is a low threshold for future impacts.

As has been documented throughout the region, past timber harvest practices were far more harmful than those utilized following adoption of the modern Forest Practice Rules. The best-documented example of this is in the Caspar Creek watershed within JDSF, where studies show a significant decrease in sediment loading and peak storm flows following recent "modern" harvests (clear cutting with roads located in mid and upper slope positions in the North Fork of Caspar Creek) relative to earlier harvests (selective harvests with low slope roads in the South Fork of Caspar Creek). As such, future timber harvests must be weighed with the impacts associated with past harvests, since watersheds are clearly still recovering (see results of Lettis & Associates study discussing sediment storage in the Noyo River). Other past projects that have resulted in watershed impacts are primarily associated with the development of roads (Highway 20, residential roads, ranch roads, etc.). We are not aware of other significant developments or projects in the pertinent watersheds that have resulted in impacts that should be considered in a cumulative effects analysis.

Studies in Caspar Creek (Lewis, 1998) suggest that:

1) management impacts are generally proportional to the area disturbed, and
2) that the effects of multiple disturbances within a single watershed are approximately additive.

As such, it appears that a logical approach to limiting adverse cumulative watershed-scale impacts is to limit the amount of disturbance that occurs within a particular watershed within a

certain time frame. Unfortunately, current knowledge does not allow definition of a particular threshold of disturbance. As such, it is not currently feasible to define an appropriate rate of watershed impact or disturbance at the programmatic level of the proposed JDSF Forest Management Plan. Therefore it appears that adverse cumulative watershed impacts must be mitigated at a smaller scale.

The JDSF Forest Management Plan contains a wide range of elements intended to minimize management-related impacts at both the watershed and subwatershed scale. Subwatershed scale mitigation will occur primarily during the THP process and in enactment of the Road Management Plan. THP-level provisions include specific management practices to mitigate the potential to introduce sediment to area watercourses, and are described in the Watershed section of Chapter 3. That discussion describes specific goals for Riparian Management, Hillslope Management to Provide for Slope Stability, Logging Systems, Road Management Plan, and Water Quality. Day-to-day guidelines for roads, riparian zones, watercourses, and hillslopes are defined, and appear to include the current, state-of-the-practice approaches to low impact forest management.

Watershed scale mitigation will primarily result from the "monitoring and adaptive management" strategy outlined in Chapter 5. Monitoring is to be used to evaluate progress toward the stated goals of the Management Plan. Adaptive management refers to management strategies that will be utilized should monitoring indicate that "resource conditions begin to deviate from the desired trajectory." The Management Plan defines specific Watershed Resource goals to mitigate road and crossing problem sites, to minimize erosion impacts, to minimize management-related landslides, and to maintain or improve aquatic and riparian habitat conditions and minimize sediment delivery to watercourses. In addition, the Plan proposed to "minimize potential cumulative watershed effects resulting from forest management activities" based on a long-term agreement between CDF and the USFS-PSW to continue conducting watershed research at Caspar Creek.

Past projects involving clear cutting of most of the forest while owned by the Casper Lumber Company and construction of roads and railroads through or alongside of stream channels contributed to erosion and mass wasting causing severely adverse conditions in streams. Early management by CDF in the 50s and 60s followed similar but less severe practices. Changes in the Forest Practice Rules caused CDF to locate new roads on ridgetops with outsloping surfaces causing major reductions in erosion from road surfaces and from mass wasting.

Current new road construction is limited to short extensions on ridgetops to allow for cable yarding at the top of timber harvesting plans or for helicopter yarding. Both yarding systems produce far less erosion than older methods. Further, the great reduction in new road construction is causing corresponding reductions in the amount of construction related erosion.

Future timber harvesting, limited road construction, and the new Road Management Plan are expected to cause further reductions in human caused erosion. The present and future practices are expected to reduce erosion to low levels that will enable streams to clear themselves of the

excess burden of sediments caused by past activities and to restore conditions favorable to high quality aquatic life.

The provisions contained within the proposed Forest Management Plan appear to define adequate steps to mitigate potential impacts that may lead to adverse cumulative effects, based primarily on state-of-the-practice management methodologies. In addition, it is likely that future TMDL studies will impose specific goals and thresholds that will define the level of appropriate impact associated with future management.

Cumulative Impacts of Hazards and Hazardous Materials

Implementation of the Plan will result in continued use of hazardous materials, such as fuels, lubricants, and pesticides in compliance with the Forest Practice Rules and other applicable regulations. Requirements for the transport, storage, handling, and disposal of the hazardous materials that might be used at JDSF are established and enforced by the NCRWQCB, Department of Pesticide Regulation, and County Agricultural Commissioner. Any foreseeable increase in hazardous chemical use would still be within the acceptable limits established by the Mendocino County Agricultural Commissioner and the NCRWQCB. Compliance with all Federal and State laws, codes, and regulations will minimize to less than significant levels any potential impact that may result from the transport, storage, handling, and disposal of the hazardous materials.

Furthermore, based on evaluations CDF has conducted on this issue in relation to herbicide use by other landowners, potentially significant impacts related to the actual application of herbicides on JDSF are not expected. A CDF report titled ***Environmental Effects of Herbicide Related to Timber Harvesting*** (Norm Hill and Wendy Wickizer March 4, 2002) states that "***The effects are generally not cumulative impacts because uses related to different Timber Harvest Plans (THPs) are separated in time and distance so that their individual effects rarely reinforce or interact with each other.***" Additionally, the report states:

> …the plan (THP) submitter is bound by State and Federal law to use herbicides only in accordance with their label restrictions: CDF finds that there is no significant adverse effect that will result from this plan related to herbicide use.

In the official response of THP 1-01-208 HUM, December 2001, CDF replied regarding the issue of herbicide use on this THP proposed by Pacific Lumber Company (PALCO). CDF based most of its responses on findings that were made in an EIR PALCO prepared for its Habitat Conservation Plan (HCP) as it relates to harvesting redwood timberland in Humboldt County. One of the responses states,

> Applications will occur as part of the initial site preparation activities and are considered to the extent that vegetative re-invasion of the site will be delayed and because significant averse impacts on the environment are not expected to occur from the

> lawful use of herbicides." Additionally the response states, "No mitigations were determined to be necessary with respect to limiting herbicide use based on an identifiable significant adverse impact (as it relates to CEQA).

Ultimately the response finds "***The herbicide use that could potentially be used in the plan area are not likely to have any significant impacts on the environment, humans, wildlife, or water quality."***

Under the California Environmental Quality Act, the determination of a significant effect must be based on substantial evidence in the record (Pub. Res. Code sec. 21082.2). Controversy or intensely held opinions not based on substantial evidence will not justify deciding that an effect is significant. Due to the absence of substantial evidence that pesticides, when properly used, present a threat to the environment or human health, this EIR has concluded that pesticide use on JDSF is not a potentially significant effect on the environment.

Cumulative Impacts On Hydrology and Water Quality

Cumulative impacts relating to peak flows and sedimentation have the potential to occur as a result of the proposed project. Project impacts are discussed in the Hydrology and Water Quality Section 10.4.3. In addition, Appendix 11 provided a detailed accounting of potential cumulative watershed effects (CWE) relating to peak flows and sedimentation.

Peak Flow Cumulative Impacts

CWE relating to peak flows were assessed (refer to appendix 11) using the methodology presented by USFS Redwood Science Lab in the Review of Freshwater Flooding Analysis (Lisle et. al. 2000). This analysis was based on the harvest levels for the 20-year period from 1980 – 1999 and the projected harvest levels and methods included as part of the DFMP. The analysis indicates that peak flows generated from relatively small storms that occur early in the season (2-year storm return interval using a dry wetness index of 50) are expected to increase less than 11 percent. While no threshold standards have been determined for peak flow increases, studies (Lewis et al. 2001, Grant et al. 1999, Zeimer 1998) have indicated that peak flow increases in this range have been relatively benign, causing no significant adverse effects. Therefore, the proposed project will not result in a considerable contribution to peak flow related cumulative impacts.

Sedimentation Cumulative Impacts

A discussion is provided in appendix 11 in regards to potential cumulative watershed effects related to sedimentation. Also, please refer to the previous Geologic and Soil Conditions section for additional discussion. In summary, management-related activities have accelerated the naturally high erosion and sedimentation rates. Increased erosion and sediment yields have been documented from roads, compacted areas, and mass wasting sites. However,

implementation of improved Forest Practice Rules (FPR) and Best Management Practices (BMP) over the last 20 years is considered to have significantly decreased sediment input to streams relative to past practices (Cafferata and Spittler 1998, Lewis 1998, CDF 1995, SWRCB 1987).

The relationship between peak flow increases, stream channel geomorphology and sedimentation is also discussed in appendix 11. In summary, studies completed in the North Fork Casper Creek indicated that increased volume of stream-flow following logging was strongly correlated to increased sediment delivery and transport (e.g. post-logging increased storm flows provide additional energy to deliver and transport available sediment). Other variables found to be significant were road cut and fill area and length of unbuffered stream channel, particularly in burned areas (Lewis et al. 2001). Channel geomorphology influences suspended sediment load transport and storage. Lewis et al. (2001) concluded that sediment loads are affected as much by channel conditions (e.g. organic debris, sediment storage sites, channel gradient, width-to-depth ratios) as by sediment delivery from the hillslopes. Similarly, Koehler et al. (2001) states that increases in suspended sediment loads from sediments trapped in long-term channel storage sites (10 to 100 or more years), and transported downstream during high flow events, have the potential to create an overestimation of the sediment generated by contemporary upslope management practices.

The most important explanatory variable in the aggregate analysis of the North Fork Caspar Creek sediment loads was increased stormflow (Lewis et al. 2001). As peak flow increases are greatest for the smallest peaks occurring during the driest antecedent conditions, Lewis et al. (2001) found most of the larger percentage increases in clearcuts were from small events and equated to relatively minor absolute increases in sediment load. Median percentage increases were greater in clearcut watersheds than in partially cut watersheds. As the peak flow increases diminish with vegetation growth, flow related increases in sediment load are expected to be short lived.

As the peak flow increases are anticipated to be relatively benign, the short-lived suspended sediment increases associated with peak flows are similarly anticipated to be relatively benign. of greater consideration are the silviculture and channel protection measures that have been shown to influence suspended sediment loads, and the road and landslide measures that have been shown to increase sediment inputs. Correspondingly, suspended sediment loads increase in clearcuts, in channels without buffers, and in small drainages that are burned and/or reshaped. Sediment delivery from landslides and road failures increase when failures are in close proximity to a watercourse (common along steep inner gorge settings, where roads are located adjacent and parallel to a stream, on improperly constructed roads and legacy roads, at road crossings, and roads with inadequate maintenance).

The proposed project was designed to mitigate these potential impacts by reducing the amount of clear cutting and modifying the silvicultural method to retain more vegetation, providing significant stream channel buffers for vegetation retention and equipment exclusion, minimizing burning adjacent to watercourse channels, implementation of a road management plan to minimize sediment delivery to watercourses from roads, and hillslope management practices to minimize mass wasting.

Given these management practices, the proposed project will not result in a considerable contribution to sedimentation related cumulative impacts.

Noise Cumulative Impacts

Noise impacts are generally considered cumulatively significant if, in conjunction with past, present, or reasonably foreseeable future projects, they are not consistent with the local general plan, or would subject persons to noise levels above acceptable levels. Sensitive receptors considered in the analysis of implementation of the DFMP include recreation areas within the Forest itself and rural residences bordering the western edge of JDSF.

Logging related noise generally temporarily and intermittently generates noise levels significantly above ambient noise levels. Specific levels of noise generated during logging operations depend on the particular types, number, and usage rates of equipment used. In the absence of mitigation measures, implementation of the DFMP together with other foreseeable impacts in the area may cumulatively significantly increase the level of noise that certain sensitive receptors currently experience.

Such cumulative impacts that may result from noise due to the proposed project include:

- A substantial temporary or periodic increase in ambient noise levels above levels existing without the project will accompany any logging operations conducted under the DFMP. Sources of noise associated with logging likely to impact the noise environment in JDSF may include log trucks, yarding equipment, tractors, helicopters, saws, and other equipment. Under the DFMP, noise generated within JDSF by recreational uses such as shooting and ORVs will not significantly increase existing noise levels. Result in increase in noise in the project vicinity.

Without mitigation, project contributions to an increase in temporary or periodic ambient noise levels above established thresholds would be considered a significant cumulative impact when taken cumulatively with other potential high noise production activity on or near JDSF. The cumulative impact will be reduced to less than significance with incorporation of mitigation measures.

As discussed in the project impacts section for Noise (DEIR Section VII.12), impacts have been mitigated to a less than significant level. The mitigation measures are listed below with corrections from original form in the DEIR.

Mitigation Measure: Active timber operations within the vicinity of occupied campgrounds and picnic areas will be limited to weekdays and non-holidays. Noise abatement mitigation will be included in any timber sale within 1,000 feet of an open campground or within 200 feet of a residence, park, or other identified sensitive receptor. Camp hosts will be kept informed of activities associated with timber operations affecting campgrounds under their jurisdiction. In addition, noise and disturbance impacts on nest sites of listed species and neighbors will be

considered in decisions to prescribe helicopter use in logging operations. The Mendocino General Plan standards for residential dwellings in rural suburban communities will be used as a guide in assessing noise impacts expected from specific timber harvest operations.

The following helicopter flight modifications will be utilized when necessary to further mitigate noise impacts within and adjacent to JDSF to a level less than significant:

1. Buffer helicopter pads by using ridges or other solid sound attenuating landscape features where available and practicable.
2. Design helicopter flight paths to provide buffering distance from hiking trails, campgrounds, and areas inhabited by species of concern where necessary.
3. Where practicable, design helicopter flight paths using terrain features that would minimize noise reception by sensitive receptors (i.e. fly behind ridges).
4. Limit times of day for helicopter use to minimize impacts within and adjacent to JDSF.

In addition to mitigation measures specified within the DFMP, utilizing the Mendocino County General Plan and other existing standards as guidance in the development of mitigation will reduce noise impacts from timber operations within JDSF to a level less than significant (see Land Use section). Logging related noise levels likely to be generated under the DFMP are consistent with applicable state and federal noise standards.

Logging operations will increase ambient noise levels near an active timber harvest; however, given the temporary, remote and seasonal nature of timber harvest, mitigation measures will reduce noise impacts to a less than significant level.

Monitoring of mitigation measures will occur as specified in the Noise Section of the DEIR

Cumulative Impacts On Botanical Resources

Cumulative impacts to botanical resources have the potential to occur as a result of ground or vegetation disturbing projects when considered in combination with past, current and reasonable foreseeable future projects. Adverse impacts are related to direct impacts to a sensitive species or indirect impact through habitat modification. A cumulative impact may occur if multiple ground or vegetation disturbing projects impact sensitive botanical resources to the degree that the range of a species is compromised or the population viability of a species on JDSF is compromised. However, the potential occurrence of this cumulative impact as a result of implementing the Forest Management Plan has been minimized through the design of the Forest Management Plan and mitigations proposed in the EIR.

Direct and indirect impacts are addressed through project level surveys and development of protection measures. In summary, the botanical protection measures include project specific scoping in consultation with DFG to assess potential impacts, project specific surveys to identify sensitive botanical resources, and development of appropriate mitigation measures to avoid or minimize impacts. The THP review process will provide DFG and the public the opportunity to

review and comment on proposed timber harvesting and botanical related mitigation measures developed for protecting botanical resources. Future THPs and other projects subject to CEQA review will also include additional cumulative impacts analysis including an assessment of sensitive botanical resources that will be affected by the project.

Cumulative impacts to botanical resources will be reduced to less than significant by avoiding and minimizing direct and indirect impacts to sensitive species as proposed in the FEIR, and from implementation of the monitoring and adaptive management strategy outlined in Management Plan chapter 5. Monitoring will evaluate the progress toward the goals on the management plan. Adaptive management refers to the change in management strategies that will occur if monitoring indicates that resources conditions are not progressing toward the goals of the management plan. This process will provide JDSF the flexibility to review and modify the design of botanical mitigation measures to ensure that mitigation measures are effective in protection botanical resources in JDSF. Conducting project specific surveys and providing positive findings of sensitive plants to DFG will allow JDSF and DFG to develop baseline data on sensitive plants so that the effectiveness of botanical protection measures can be evaluated. Developing and maintaining this type of data, and working with other agencies and resource professionals to evaluate the effectiveness of project objectives comprise the first goal of the Forest Management Plan. Implementation of the Forest Management Plan with the additional mitigation measures proposed in the EIR will not result in a considerable contribution to cumulative impacts on botanical resources.

Cumulative Impacts On Timber Resources

Implementation of the DFMP was determined to have a potential adverse cumulative effect on the following Timber Resource value areas:

- Old Growth Forest
- Late Seral/Late Successional Forest Characteristics
- Maximum Sustained Production of High Quality Forest Products (MSP)
- Application of Silvicultural Methods and effects to other resource areas
- Conifer Species Diversity and Hardwood Management

<u>The potential adverse cumulative effects related to old-growth forest values as a result of the DFMP implementation are expected to be less than significant in the short term, and likely result in positive or beneficial effects in the long term</u>. As described in DEIR Section 6.3.6 regarding project impacts on page 178, presently there are 11 old-growth groves totaling 459 acres that are designated for retention. In addition, the DFMP identifies that aggregations (>2 acres) of existing old growth and individual old-growth trees within the larger young-growth stands will be retained with limited exceptions. There will be no reduction in old-growth forest, no reduction in old growth aggregations, and the potential for removal of residual old growth trees has been reduced to less than significant.

The DFMP also identifies that buffers adjacent to three of the groves are created to provide for late seral forest recruitment with protection measures provided similar to the old-growth groves. In addition to these protection measures for existing old growth, the DFMP provides for late seral recruitment in areas identified in the following paragraph that are expected to total over 23% of the JDSF land base. It would be expected that over the long term, old-growth forest values would be enhanced with the measures of old-growth retention and late seral forest recruitment as contained in the DFMP. No significant adverse short-term or long-term cumulative effects related to old-growth forest values are expected as a result of implementing the JDSF DFMP.

Under the California Environmental Quality Act, the determination of a significant effect must be based on substantial evidence in the record (Pub. Res. Code sec. 21082.2). Controversy or intensely held opinions not based on substantial evidence will not justify deciding that an effect is significant. Due to the absence of substantial evidence that the removal of a very limited number of individual old growth trees presents a threat to the environment, this EIR has concluded that the limited removal of old growth trees that is likely to occur as a result of the management plan is not a potentially significant effect on the environment.

Potential adverse cumulative effects related to late seral/successional forest characteristics as a result of the DFMP implementation is expected to be less than significant in the short term, and likely result in positive or beneficial effects in the long term. As described in DEIR Section 6.3.6 regarding project impacts on page 178-181, JDSF intends to recruit trees with late successional characteristics in areas that enhance the ecological effects of forests with these structural characteristics, such as the Mendocino Woodlands Special Treatment Area, areas adjacent to three of the old-growth groves, WLPZs, and other Special Concern areas. These areas managed for development of late seral structural conditions are expected to occupy approximately 20% of JDSF.

A near term assessment (15 years) of stand structure changes was included on pages 179-180, and it was determined that in the short term, development of late successional forest conditions will be minimal. A long term assessment (100 years) of stand structure changes was included on pages 180-181, and it was determined that in the long term, development of late successional forest conditions will be progressing towards optimum conditions found in late successional forests as a result of implementing the DFMP. It would be expected that over the long term, late successional forest conditions would be enhanced with the measures of old-growth retention and late seral forest recruitment as contained in the DFMP. No significant adverse short-term or long-term cumulative effects related to late successional forest conditions are expected as a result of implementing the JDSF DFMP.

Potential adverse cumulative effects related to maximum sustained production of high quality forest products (MSP) as a result of the DFMP implementation is expected to be less than significant in both the short term and long term. The JDSF allowable harvest level is predicated on the goal of non-declining inventory levels where the intent is to harvest less than growth in any 10 year rolling planning period. Presently, the JDSF has a LTSY projection of 40-50MMBF per year, and a present estimate of unconstrained measured growth of 65 MMBF per year, while

the proposed harvest level identified in the DFMP is 31 to 33 MMBF per year. Accounting for possible statistical variances of the growth estimates, it is expected the proposed harvest level will result in an inventory increase.

The LTSY projection was based on the Option "A" analysis performed for JDSF based on the growth model CRYPTOS calibrated to the empirical yield tables and constrained to 80% of maximum Stand Density Index. It was recognized that CRYPTOS was developed for use in even-aged redwood stands, but is currently the only growth and yield model available for use in redwood stands. Its use overestimates the growth rates of in-growth trees and predicts a higher future volume than actually experienced under an uneven-aged system. In the short term of 10 to 15 years, CRYPTOS can be used to accurately predict the growth and yield of the uneven-aged stands. However, over the long term, the ability of CRYPTOS to accurately predict stand development in uneven-aged stands, particularly the in-growth trees in the understory, is debatable.

Basing allowable harvest levels solely on this type of modeling could result in a long-term significant impact to timber growth and yield. The Forest staff recognized the potential for CRYPTOS to overestimate growth in uneven-aged management areas. In addition to establishing a conservative harvest level of 31-33 MMBF per year, the DFMP (chapter 5) commits the Forest to a monitoring and adaptive management program that includes growth and yield. Growth will be monitored as part of the continuous forest inventory system that will continue to be re-measured at five-year intervals. Furthermore, the Forest is working towards a long-term solution to the uneven-aged modeling problem. The Forest has committed to a number of growth and yield studies including the Asymmetrical Coast Redwood Growth Model Study that was initiated in 1986 to develop a process based coast redwood growth model that can be used on partial harvest and uneven-aged management areas. Re-measurement of the thinned stand using the developed specifications will be done during the latter part of the planning period to verify the growth model projections. The Casper Creek Cutting trials, the Long Term Pre-commercial Thinning Study, the Railroad Gulch study, the Whiskey Springs Thinning Study and other studies all have potential to provide growth and yield data that may address the uneven-aged modeling problem.

Given the conservative harvest level in comparison to growth, monitoring and adaptive management measures, and additional studies of growth and yield, no significant adverse short term or long term cumulative effects related to MSP are expected as a result of implementing the JDSF DFMP.

<u>Potential adverse cumulative effects to other resource areas from application of silvicultural methods as a result of the DFMP implementation is expected to be less than significant in both the short term and long term</u>. As contained on page 183 of the DEIR,

> Implementation of the silvicultural allocation plan and short-term harvest schedule will create a diverse mosaic of forest age-class structures at the landscape level that will contribute to habitat stability, research opportunities, maintenance of biodiversity, and

> functional forest ecosystems. The allocation of silvicultural systems addresses potential conflicts with State Forest recreational use and local public interest values. Practices similar to even-aged silviculture that would encompass five or more acres were minimized in management compartments adjacent to certain areas of special concern where management is constrained. Uneven-aged management, which tends to maintain a continuous forest canopy, has been incorporated within the management compartments with identified sensitive public interest values.

State Forest staff will continue to conduct site-specific assessments to determine the appropriateness of silvicultural prescriptions for any given area. The silvicultural allocation plan provides for protecting the recognized areas of special concern. Impacts related to these timber resource values are considered to be less than significant.

Table 25 on pages 184 and 185 provides silvicultural limitations for the various Special Concern Areas as identified in the DFMP. With these identified silvicultural limitations, silvicultural mitigation measures in the DFMP, on-going monitoring and site specific assessments to determine adequacy of resource protection and adaptive management, no significant adverse short term or long term cumulative effects to other resource areas from the application of identified silvicultural methods are expected as a result of implementing the JDSF DFMP.

Potential adverse cumulative effects related to conifer species diversity and hardwood management as a result of the DFMP implementation is expected to be less than significant in both the short term and long term. The DFMP provides for retaining conifer species diversity as required by the FPRs and managing hardwood species at levels, which more closely resembles natural conditions and is conducive to attaining MSP for the Forest. The DFMP identifies that redwood and Douglas fir are the favored conifer species for regeneration. Hemlock and grand fir are to be managed for no increase over current levels. Bishop pine is being controlled to remain a minor species where it occurs in commercial stands. Where artificial regeneration is used following a timber harvest, both redwood and Douglas-fir seedlings will be planted. The relative numbers of each species is determined after an assessment of the site to evaluate whether it is more suited for one species or the other.

Pages 185 and 186 of the DEIR identify a potential long-term effect on confer species diversity.

> A concern for long-term conifer species diversity exists where singletree selection or cluster selection silviculture is implemented over a longer period of time. The understory growth of shade intolerant redwood and Douglas fir is expected to be retarded due to light conditions more favorable to shade tolerant species hemlock and grand fir. This would result in higher percentages of hemlock and grand fir in the composition of the under story of the future stand, changing the conifer species diversity desired. The overstory would be expected to

> trend toward all redwood and Douglas fir. Based on the preference for retention of redwood and Douglas fir stated in the DFMP, the majority of hemlock and grand fir will have been harvested from the overstory. Some of the trees not harvested would likely develop into snags or are blown down due to these species susceptibility to exposure and wind effects following thinning of the forest canopy. The continuing forest inventory will allow JDSF staff to monitor species diversity and adopt management techniques to prevent a significant change in species diversity.

The DFMP states on page 61 that:

> JDSF will maintain the naturally occurring hardwood components in riparian stands (WLPZs) and other special concern areas when consistent with the objectives of that area. The goal is to maintain hardwood tree composition at approximately 10 percent (West End) to 15 percent (East End) of the stand basal area. Maintaining and recruiting hardwoods on JDSF, including larger size classes, will enhance not only wildlife species diversity but also forest structural diversity.

Page 60 of the DFMP states "***All hardwoods 36"DBH+ will be considered for retention."*** Individual hardwoods are retained in most stands in order to recruit hardwoods into larger size classes, and to develop valuable wildlife habitat elements. In areas of the Forest with an overabundance of hardwoods, the emphasis will be to restore the stands to a conifer-dominated condition. In addition to native hardwood species control, within the Eucalyptus infestation area identified above in the Special Concern Areas, silviculture methods are prescribed to control the spread of Eucalyptus.

With these identified measures to insure short term conifer species diversity, on-going monitoring and adaptive management to insure long term conifer species diversity, and identified measures to provide for suitable hardwood presence, no significant adverse short term or long term cumulative effects to conifer species diversity and hardwood management are expected as a result of implementing the JDSF DFMP.