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Forest Conference-Supplemental Environmental Impact Statement (SEIS)

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THE WHITE HOUSE

WASHINGTON

August 6, 1993

MEMORANDUM FOR: DISTRIBUTION

FROM: David Cottingham *David*
Office on Environmental Policy

SUBJECT: Forest Conference SEIS

First, my compliments to the SEIS team for producing a very good document in a short time. The men and women in Portland deserve many kudos for a job well done. I also congratulate all of you and your agencies for making sure that the documents cleared your agencies quickly. Thanks.

The SEIS team in Portland is alive and kicking. They have already begun analyzing their next steps regarding the EIS and FEMAT report. I thought you would be interested in seeing some of the issues team members are dealing with.

The schedule the team has developed requires rapid turn around of the comments on the SEIS and preparation of the FEIS. Public hearings are scheduled for the week of September 27. Assistant Secretaries Lyons and Armstrong will preside. We will continue to need the assistance of all Washington headquarters as well as regional offices to assure that we meet tight deadlines for the FEIS and Record of Decision.

Attachment

DISTRIBUTION

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David Ketcham FS <i>8</i>	205-1708	205-1074 <i>5th floor south wing</i>
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Anne Miller EPA <i>2119 mull</i>	260-5071	260-0129
Shannon Cunniff EPA <i>2119 mull</i>	260-5067	260-0129
Wells Burgess DOJ <i>601 Penn Rm 865</i>	272-6958	272-6815

cc:

Bob Jacobs FS-Portland 503-326-7685 503-326-7624

Dec 2/22 SAT

① Representation of motion as unopposed.

② clarity is required to arguments by answer

③ Ability to reconfigure RD or 2A.

④ FUNDING

POY. BACKS

VIABILITY REQUIREMENTS FOR UNLITIGATED NON VETERANS

First BENTLEY 15674.

⑤ STUDY REPORT

a. What type of commitments are being made

b. What happens if the surveys are not done -

c. Certain reliability ratings indicated that reliability for certain
unpublished are low

d. Structure the discussion of study & protect in the 8218
so as to not

⑥ The central issue is in the Tier 2 Key Workshops and
All other workshops is moving from 50' to 100'.

⑦ Murrelets: If we do full SAT, it will take care of the
majority of murrelet conservation needs. Does SAT
do murrelets?

⑨ You said that if full SAT says for 1 hr? Biological opinion + most of unrel. sh, then do it.

(KUM) ⑩ Two items
a. What does 25% require on full? full SAT?
b. How much more

⑪ Is it possible to

NMT ⑫ Quick listing, occurs, then all interested parties would
⑬ to 100' in non-veg watershed.

AKC ⑬ ② Disposal: full SAT + other smaller analysis
will eliminate any questions on water or
the general matrix prescription.

⑬ ③ Quick 50/54% of riparian areas meet
current prescription, which means that about 46%
doesn't meet it, and, in consultations on both geographic
sides, either 50/11/40 or something else may
be required. -- regarding of

⑭ ④ PREP/ 50' for interim for undesignated
or soon as listed, then it will go to 100'

⑮ CALIFORNIA

(10)

Full Set

1. Salamanders over 3/4 of range are occupied by
Salamanders.

2.

(1)

1-90 Area should disappear

Pump Creek wants out

entire area of LSE overchecked

(2)

2010-5537-5545 (RIST)

232-7184 (HOME)

ILLUMINATE.

ROADS ARE AT THE TOP

(1)

full set / full set

amphibians + Salamanders
unusually

(2)

full productions for ~~both~~ LSEs

(3)

ROADS

(4)

Amph

Shubs

Says

Hot Arm



Interagency SEIS Team • (503)326-7883
P.O. Box 3623, Portland, Oregon 97208

January 6, 1994

Memorandum

To: Interagency Review Team Members (Attachment A)

From: Bob Jacobs, Team Leader *Bob Jacobs*

Subject: Interagency Review of the Final Supplemental Forest Plan EIS and Draft ROD

You have been identified as your agency or region's representative for the review of the Final Supplemental Environmental Impact Statement on Management of Habitat for Late Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl (Final SEIS), and the draft Record of Decision (ROD). The review will be in Portland, Oregon, January 24 - 27, 1994.

The intention of the review is to identify and resolve potentially "fatal flaws" from a procedural and policy standpoint. These would be potential violations of law, regulations or policy that have the potential to prevent implementation of the President's Forest Plan. The review will focus on resolution of key issues or topics that will be identified at the review meeting. Technical editing and editorial comments are not solicited in this review, although you will have the opportunity to submit such suggestions that may be incorporated as time allows.

Due to the tight court-ordered deadlines imposed on the team, this will be a structured review. The review will be conducted by topic, rather than by section of the SEIS. This will allow us to fully discuss each issue and assure consistency in problem resolution throughout the document. Problems you identify during the review must be accompanied by your proposed solution in writing. There will not be time for subsequent reviews or approvals, so it is critical that you have the authority to represent your agency, region or office.

The review will take place in the U.S. Bancorp Tower building, 111 SW Fifth Avenue in Portland. The proposed agenda for the meeting is attached (Attachment B). You may pick up the documents for review any time after 8:00am, Monday, January 24, at room 1440 on the 14th floor. The meetings will be held in Conference Rooms B and C on the 26th floor.

OPTIONAL FORM 99 (7-80)

FAX TRANSMITTAL

of pages ► 4

To <i>Wille Stelle</i>	From <i>Bob Jacobs</i>
Dept./Agency <i>DEP</i>	Phone # <i>503-326-7883</i>
Fax # <i>202-456-2710</i>	Fax #

NSN 7540-01-517-7388

5099-101

GENERAL SERVICES ADMINISTRATION

A block of rooms has been set aside at the Hilton Hotel, 921 SW Sixth Avenue, Portland, (503) 226-1611, for the nights of January 23 - 27, 1994. The government rate is \$67 (with a tax exempt form we will provide to you). The rooms are blocked for the "Interagency Review" and will be held until January 14, so please make your reservations before that date. The hotel is within walking distance of the U.S. Bancorp Tower building. Travelers may take the RAZ transport from the airport (every half-hour on the hour and half-hour) directly to the hotel for \$7.00 one-way.

If you have any questions about the structure or intent of the meeting, or if there is a change in who will attend from your agency or office, please contact John Singlaub at 503-326-7669. If you have any administrative or logistical questions, please contact Kay Pennell at 503-326-7690. We greatly appreciate your assistance in this interagency effort.

Proposed Interagency Review Participants, Jan. 24 - 27, 1994

<u>Name</u>	<u>Representing</u>
Will Stelle	White House, Office of Environmental Policy, Washington, DC
Tom Tuchmann	White House, Office of Forestry and Economic Devt., Portland
David Cottingham	DOI - Office of the Asst Secretary, Washington, DC
Kris Clark	DOI - Office of the Solicitor, Washington, DC
John Farrell	DOI - Office of Environmental Affairs, Washington, DC
Mark Gaede	USDA - Office of the Asst Secretary, Washington, DC
Tim Obst	USDA - Office of General Counsel, Washington, DC
Wells Burgess	Department of Justice, Washington, DC
Steve Odell	Department of Justice, Washington, DC
Tom Walker	Bureau of Land Management, Washington, DC
Phil Stanbro	Bureau of Land Management, State Office, Portland
Phil Hamilton	Bureau of Land Management, State Office, Portland
Dick Johnson	Bureau of Land Management, California
Jim Overbay	Forest Service, National Forest System, Washington, DC
Susan Yonts-Shepard	Forest Service, National Forest System, Washington, DC
Jim Saunders	Forest Service, National Forest System, Washington, DC
Jay Gore	Forest Service, National Forest System, Washington, DC
Rhey Solomon	Forest Service, Environmental Coordination, Washington, DC
John Lowe	Forest Service, Regional Office, Portland
Dale Bosworth	Forest Service, Regional Office, San Francisco
Anne Miller	Environmental Protection Agency, Washington, DC
Jacqueline Wyland	Environmental Protection Agency, Regional Office, San Francisco
Mike Spear	Fish and Wildlife Service, Washington, DC
Marv Plennart	Fish and Wildlife Service, Regional Office, Portland
Jake Hoogland	National Park Service, Washington, DC
Bill Walters	National Park Service, Regional Office, Seattle
Gary Smith	National Marine Fisheries Service, Regional Office, Seattle
?	National Biological Survey
Ron Eggers	Bureau of Indian Affairs
One rep	Regional Ecosystem Office/Interagency Implementation Team
Marty Raphael	Scientific Advisory Group

Members of the SEIS Team will be available the whole time as advisors.

**Proposed Agenda
Interagency Review, January 24 - 27, 1994**

Monday, January 24

after 8:00am Interagency review participants arrive in Portland. Review copies of Final SEIS and draft ROD available on 14th Floor to be picked up by participants.

Tuesday, January 25

8:00am Meeting of all participants. Go over ground rules for review; describe the document contents and organization; discuss changes between draft and final; identify critical review topics.

9:00am Recess to allow reviewers time to read the documents.

Wednesday, January 26

8:00am Revisit, add and prioritize review topics. Go through each topic in priority order, come to resolution on each topic: decision or course of action to resolve.

Ideally, meeting would be concluded by end of day. However, could continue on through Thursday until 11:30am.

Thursday, January 27

8:00am Option to continue meeting until 11:30.

11:30am Adjourn meeting.

5:00pm Deadline for all rewrites, new material from reviewers, editing and corrections to SEIS Team.



United States Department of the Interior

OFFICE OF THE SECRETARY

Washington, D.C. 20240

TRANSMISSION NOTICE

*FILE
FOREST PLAN
" REVISIONS TO DZIS"*

This message is electronically transmitted on a Xerox, 7033 Facsimile machine.

Transmission Number: 202/208-4684

Verification Number: 202/208-6655

To: Name: Will Stelle

Agency Phone Number: 202 456 2710

From: A/S Staff Member: Don Knowles

Department of the Interior
Assistant Secretary for Fish
and Wildlife and Parks
1849 "C" Street N. W.
MS-MIB-3156
Washington, D.C. 20240

Number of Pages to follow: 12

Date: _____

Time: _____

Will- Please call if you have questions

George:

I thought you would enjoy the cartoon.

I need to give you a status report on our effort to improve the reserve status of some of the Late Successional Reserves (LSRs) in alternative 9 by making some of them "inviolate". There are some interesting approaches but I need some additional guidance from you as to the appropriate policy goals.

First, I need to ensure I am using an accurate set of assumptions. I assume we are trying to emphasize the reserve nature of some of, or some portion of some of, the LSRs. In particular, we are trying to make "inviolate" the old-growth component of some of the proposed LSRs.

We are not trying to limit silvicultural treatment of the less than 80 year old stands in the LSRs, although I understand that we are to adjust the standard from "neutral to beneficial" to "beneficial" for proposed silvicultural activities. I also understand that we are not trying to make inviolate the old-growth areas in the matrix.

I further understand that we are not necessarily trying to make a decision which needs to be reflected in the EIS, if we can accomplish our goal by including language only in the Record of Decision. For example, we need to be sure we don't recommend "no salvage/prescribed burn/etc" in LSRs which are dry and which are analyzed in a particular manner in the EIS. This distinction is also important, in part, in order not to add additional analytical work for the EIS, which would put the EIS at further risk of delay, and it will/may give us enough additional time to complete the GIS and mapping work needed to document which areas are to be designated as "inviolate".

In terms of an approach, I also assume it is preferable if we can establish a set of criteria and protect areas meeting these criteria, rather than selecting a set of areas one at a time. We always have that option, but it seems to open us up to criticism that a particular area is left out. You will see that I suggest that we use the Vento bill "crown jewel" areas as a test, comparing areas selected for protection using a criteria approach to the Vento areas to make sure we are at least protecting some of the "crown jewels".

We want to protect more acres than Vento (173,000), but would assume we don't need to protect as much as 1.5 million. We want some areas in all three states. We want to stop timber activities (ie, salvage) but want to have no more restrictions in these areas than exist for Congressional wilderness.

Finally, I assume if we can use roadless areas as one of our selection criteria, we should because it accomplishes additional policy goals.

With that background, here is a status report. The first attachment is a process chart, showing the steps I am trying to follow in the analysis. Starting with the alternative 9 LSRs, select the inventoried roadless areas. These inventories are about 20 years old and the EIS team indicates we will have to go back to the individual National Forests to have them updated. Some of the inventoried roadless have been entered and some harvest has occurred, but we do not know which ones or to what extent. Although the EIS team has been able to develop an estimate of the acres of inventoried roadless contained in the LSRs (attachment 2), it is not actually in their data base.

The third attachment is from the EIS team and includes their reaction to my discussions with them. You will see some of my assumptions restated in this attachment.

The fourth attachment is a list of all the LSRs in alternative 9, arranged by state and ranked by the percent of "old-growth" in each. I have also indicated which LSR includes the Vento "crown jewels" (attachment 5) in the "wet" provinces. This list gives us the ability to select, for example, all LSRs which are greater than ___% "old-growth" as one selection criteria, if we want to do it that way.

If we can wait until the ROD for the decision and language, and if this approach is agreeable, and if this is determined to be important enough, we can have the team devote the considerable resources needed to complete the analysis. If you can think of an easier way, we can discuss. Again, I am trying to find a way to avoid the need to hand select areas for designation, assuming that such a process is loaded with problems.

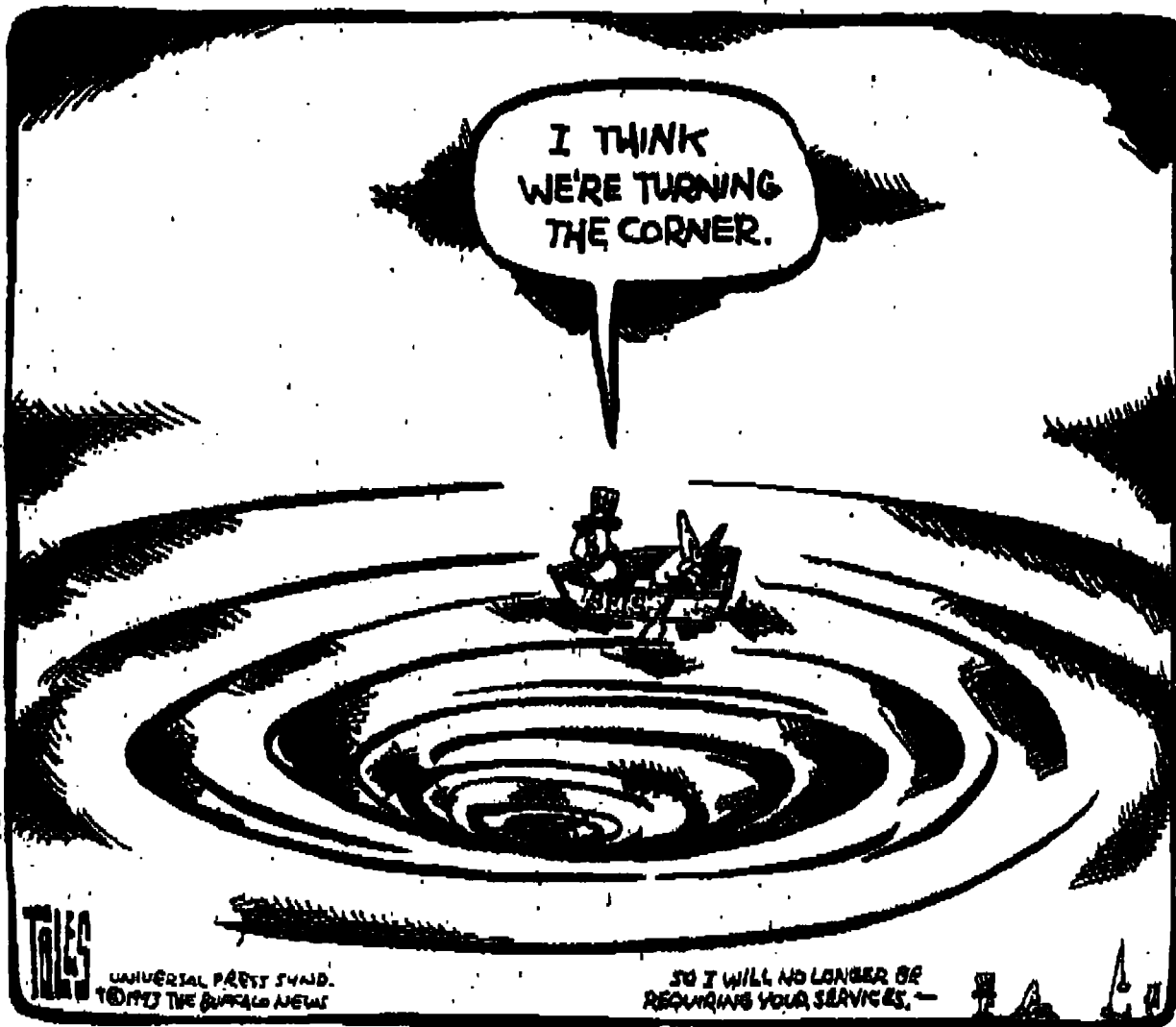
Once you read this, give me a call (202/208-3019, or home 703/750-1361, or during the weekend 919/489-7552) and we can determine the next steps.

Thanks--Don Knowles

cc: Don Barry

To: Don Knowles
From: John Singlaub
503-326-7669

18 pages



ATTACHMENT

1

"Inviolate Reserve" Selection Procedure:

Start with LSR Acreage.

↓

Then, Select Inventoried Roadless Areas.

↓

Then, Select Remaining Old Growth in Roadless Areas.

↓

Then, Select Remaining Roadless from within the remaining acreage.

↓

Apply "No Salvage" standard to these areas.

TESTS:

1. Exclude Eastside Province ("dry") for ecological Reasons?
2. Look at total acreage and geographic distribution.
3. Compare to Vento -- (Vento has no areas on BLM lands and none in California.)
4. EIS analysis -- can all necessary text be in ROD?
5. Does it satisfy policy concerns?

Table "Roadless". (Continued)

ALTERNATIVE 9

State/ Physiographic province	Total Roadless Acres	Late- Successional Reserves	Adaptive Management Areas	Managed Late-Successional Areas	Administrative Withdrawn Areas	Riparian Reserves	Matrix
Washington							
Eastern Cascades	785,100	476,900	42,600	11,400	168,500	25,500	60,300
Western Cascades	566,200	359,500	39,900	0	99,800	17,200	29,700
Western Lowlands	0	0	0	0	0	0	0
Olympic Peninsula	91,700	82,100	9,400	0	100	100	100
Oregon							
Klamath	310,900	230,100	30,200	0	29,000	7,000	14,700
Eastern Cascades	146,100	59,900	0	0	56,900	6,300	23,000
Western Cascades	356,000	211,100	4,500	0	74,700	20,100	46,000
Coast Range	26,500	24,300	2,300	0	0	0	0
Willamette Valley	0	0	0	0	0	0	0
California							
Coast Range	13,000	4,300	0	0	2,700	1,500	4,500
Klamath	599,400	257,200	93,400	0	135,000	41,900	72,000
Cascades	118,900	49,100	1,300	0	25,800	12,700	30,400

3,013,800

1,754,500

Attachment
2

*Attachment
3*

January 13, 1994

Don

Here is a new version of the material from last night, plus stuff from tonight's conversation. I rewrote the table to include the LSR numbers and I deleted the eastside Vento areas (including the eastside and Klamath stuff will really cause us problems, so please work with us to steer away from them).

The focus of the selection is existing old-growth within LSRs of the wet provinces, preferably in inaccessible areas. We can begin with the inventoried roadless areas to identify inaccessible lands.

Our initial questions:

How many acres do you want? Somewhere between 100,000 and 1.5 million.

Do you want all three states represented? Yes.

What management would be allowed? The SEIS Team suggestion is that the restrictions placed on land management within these areas would be no more strict than the standards which are applied to Congressionally designated wilderness. Therefore, prescribed fire would be allowed to manipulate certain habitats and wildfire suppression would be allowed. There are other questions about resource management such as recreational developments, and restoration projects which would have to be answered.

Size of proposal:

It seems to us that the acres of old growth represented in the Vento plan would be insignificant and not enough to seriously consider in a proposal. An alternative to the Vento plan would be to make the old growth in Late-Successional Reserves in inventoried roadless areas in the moist provinces into Administrative wilderness. The attached Table - "Roadless" shows that approximately 300,000 acres of old growth exists in the 1,000,000 acres of roadless areas in the moist provinces. Understand that the estimate of old growth acres is extremely rough and based on the ever-ready 'ocular' estimates. I am sure it is a low estimate - more accurate information can be obtained from the GIS people if we had more time.

Logistics for accomplishing the task:

Adding some form of "no-cut" reserves to Alternative 9 in the Final SEIS presents considerable analytical and logistic problems. This is especially true if a map, acreage estimates, or analysis of impacts is desired with the SEIS. It is safe to say, in fact, that even if a decision were made today, we would be facing a nearly certain request for extension from Judge Dwyer.

An approach which would allow more rational thought on the selection and

delineation of these areas (and better distribution of the workload for the SEIS Team), would be to remain silent on the issue in the Final SEIS and simply make a decision on these areas in the Record of Decision. This is defensible in terms of NEPA since the standards and guidelines for LSRs in Alternative 1 specified that no thinning or salvage would be allowed. Selection of an alternative in the ROD that mixed an aspect of Alternative 1, or a subset of it, with Alternative 9 would be within the scope of analysis and the range of alternatives in the SEIS.

Alternative 1 received lower ratings than Alternative 9 in the assessment of maintaining a functional and interconnected, late-successional forest ecosystem, due to the prohibition of management in LSRs. However, if only existing old-growth is selected and the dry provinces are not included for this designation, the differences in impacts would be minimal, more supportable ecologically, and more supportable in light of the many comments that came in regarding wildfire risk management.

Analysis of areas identified by Vento legislation and their relationship to LSRs of Alt 9.

Vento 'Crown Jewel'	Est Total Acres	LSR #	LSR Acres	Est. Old growth Acres ²
Siouxon Ck -G-P	12,590 ¹	152	12,590	6,000
Bourbon Ck -G-P	4,540 ¹	152	4,540	2,000
Elk River -Siskiyou	17,000 ³	255	17,000	7,500
Opal Ck -Willamette	11,284 ¹	136	11,284	6,000
White Chuck -MBS	5,723 ¹	209	2,860	2,400
Total			48,574	24,000

Notes:

¹ - acreage figures from Forest plans which are considered more accurate, but not always available.

² - acreage figures from Vento legislation, which is always less than FS would delineate because Vento looked for the very best within an area which the FS would have mapped.

³ - estimated old growth acres was calculated using the average medium and large conifer in LSRs. This is a very conservative estimate since all of Vento's proposed areas had a very high proportion of old growth than average.

Considerations in using this to identify "no salvage" LSRs: This gives you none on BLM lands and none in California. These are not necessarily without road access - in fact, many are delineated with roads as the boundary or have roads through them. Other Vento areas not included in the list above are located in dry site provinces. They include:

No. Kalmiopsis	Siskiyou	89,700 acres
Redwood	Siskiyou	300 acres
Gene Ck.	Wenatchee	25,600 acres
Foggy Dew	Okanogan	21,100 acres

Table "Roadless," Excluding the Dry Provinces				
ALTERNATIVE 8				
State/ Physiographic province	Total Roadless Acres	In Late- Successional Reserves	Portion of LSR in M/LOG	Projected Acres
Washington				
Western Cascades	556,200	359,500	41.8%	148,955
Western Lowlands	0	0	0.0%	0
Olympic Peninsula	91,700	82,100	34.2%	28,047
Total:	647,900	441,600	35.4%	176,402
Oregon				
Western Cascades	356,000	211,100	51.3%	108,283
Coast Range	25,500	24,300	30.8%	7,488
Willamette Valley	0	0	12.5%	0
Total:	381,500	235,400	40.7%	115,771
California				
Coast Range	13,000	4,300	17.5%	752
Total:	13,000	4,300	17.5%	752
Three-State Total:	1,053,400	681,300		292,925

Attachment 4

LSR_SERA.wb1

State	LSR No.	Fed Acre	MMHab. Acres	Med/Lrg Con 88	Med/Lrg Con MS	Small Con	Other Seral	Total Med/Large Conifer	Percent of LSR in Med/Large Conifer	Cummulative Total Fed LSR Acres
Wa.	120	1881	237	438	712	0	438	1,147	73%	1,581
Wa.	114	20401	5458	1821	11488	2530	4784	13,087	64%	21,582
Wa.	129	108133	0	8054	54521	18067	26501	63,578	69%	130,115
Wa.	111	78198	11388	9887	33132	18210	16170	42819	57%	205,314
Wa.	128	10319	0	237	8538	1898	2849	5,772	56%	218,833
Wa.	107	47842	23050	712	28580	1877	18373	28,282	55%	263,278
Wa.	122	18882	4033	8247	3044	5100	2870	9,291	55%	280,237
Wa.	128	14884	0	1028	7077	4885	2214	8,103	54%	288,221
Wa.	113	24238	7473	3400	8898	8898	3045	12,286	51%	319,457
Wa.	144	45309	17001	14183	8898	8819	13798	22,891	51%	364,768
Wa.	112	88191	23388	8717	39895	18018	23782	43412	50%	480,987
Wa.	121	8840	2018	835	2788	781	2848	3,401	50%	487,797
Wa.	126	183928	11228	32697	88712	41513	51003	91,409	50%	641,723
Wa.	153	40130	0	2095	17438	8800	12098	19,531	48%	681,853
Wa.	104	50728	20559	1877	22022	9528	17199	23,999	47%	732,879
Wa.	119	88490	8224	7438	10714	7591	12891	18,147	47%	771,009
Wa.	118	48812	3588	8817	13188	14075	10784	21,883	47%	817,821
Wa.	149	120884	44874	29771	24513	35741	30839	54,284	45%	938,885
Wa.	105	7828	4889	237	3242	2788	1881	3,479	44%	946,513
Wa.	148	80848	15719	15222	8781	7592	21271	21,883	43%	997,358
Wa.	138	8840	0	188	3440	2830	2372	3,638	43%	1,008,888
Wa.	132	14273	0	1881	4488	1285	8888	8,049	42%	1,020,171
Wa.	127	8282	0	712	3202	2451	2888	3,914	42%	1,028,423
Wa.	131	8898	0	751	2847	2178	2826	3,598	41%	1,038,121
Wa.	108	181073	70099	9212	58775	28727	88989	65,987	41%	1,199,194
Wa.	130	34041	0	4088	9807	2284	18147	13,840	40%	1,233,235
Wa.	148	8895	2017	1897	1661	3589	1780	3,858	40%	1,242,130
Wa.	147	28080	11148	5488	8970	10838	8998	11,428	39%	1,271,190
Wa.	116	115527	33488	10003	35308	33409	38808	45,309	39%	1,386,717
Wa.	118	7710	1147	1987	1028	1107	3837	2,988	38%	1,394,427
Wa.	123	28297	2728	10181	761	4349	14035	10,912	37%	1,423,724
Wa.	136	108947	0	8089	32839	49302	19017	38,828	36%	1,530,671
Wa.	134	52884	4112	4348	14233	15142	18938	18,682	35%	1,583,338
Wa.	124	2807	158	988	0	1821	188	888	35%	1,588,142
Wa.	117	58317	11347	4191	15898	9847	28783	19,887	34%	1,844,489
Wa.	146	44883	10121	10817	1384	10318	22734	11,901	28%	1,889,412
Wa.	143	2847	0	835	0	1028	1188	833	22%	1,892,288
Stoukson Wa.	152	128727	54521	17910	7882	78346	28920	28,482	20%	1,817,988
Bowdon Wa.	102	13798	4112	158	2530	8088	3044	2,888	19%	1,831,784
Wa.	101	4886	1483	188	872	2530	1188	870	19%	1,836,370
Wa.	141	34834	0	2870	3884	3479	24831	8,524	19%	1,871,004
Wa.	103	5458	1542	287	712	3758	751	948	17%	1,878,480
Wa.	142	188510	0	28027	8803	85198	98884	31,830	16%	2,071,970
Opal Ck. Wa.	138	78188	0	0	12098	42581	21508	12,098	16%	2,148,188
Wa.	139	88320	0	3282	8840	20361	37837	10,122	15%	2,218,478
Wa.	133	18853	0	791	1881	10819	5812	2,372	13%	2,234,981
Wa.	109	100888	48144	8328	5140	88841	18831	11,488	11%	2,338,049
Wa.	150	18380	1818	830	78	12810	1881	909	8%	2,350,429
Wa.	151	3836	237	78	0	1937	1818	79	2%	2,384,284
Wa.	110	3914	2095	40	0	3282	583	40	1%	2,388,178
Wa.	140	8010	0	0	40	198	8772	40	1%	2,384,188
Wa.	106	318	78	0	0	40	277	0	0%	2,384,504
Wa.	137	1700	0	0	0	751	949	0	0%	2,388,204

Summary -

WA - Total LSR - 2,366,204

OR -

3,170,821

CA -

1,765,483

Total

7,302,508

LSR_SERA.wb1

State	LSR No.	Fed Acre	MMHab. Acres	Med/Lrg Con 88	Med/Lrg Con MS	Small Con	Other Beral	Total Med/Large Conifer	Percent of LSR In Med/Large Conifer	Cummulative Total Fed LSR Acres
Or.	221	18724	10121	435	11782	872	3836	12,217	73%	18,724
Or.	280	2885	1423	2018	40	237	872	2,056	89%	19,889
Or.	217	8084	8382	8831	316	1107	1700	6,247	89%	28,743
Or.	218	27182	19057	12833	8207	872	7749	18,740	80%	55,805
Or.	210	16171	12338	8859	2175	988	4348	10,894	67%	72,078
Or.	265	43293	27478	18131	12852	3282	11160	28,783	86%	115,388
Or.	216	28929	20184	12849	4458	2058	7652	17,317	84%	142,294
Or.	285	8321	1977	119	1977	712	514	2,096	83%	145,615
Or.	206	1581	949	949	40	316	277	889	83%	147,198
Or.	220	51783	28145	7907	28843	5498	14747	31,550	81%	198,888
Or.	248	51833	18888	3163	27873	10240	9884	31,038	80%	250,822
Or.	213	84214	38272	21548	28032	4744	28853	49,580	59%	335,096
Or.	214	38774	20838	7888	14431	8247	11110	22,417	58%	374,810
Or.	224	20787	0	1821	9924	3837	5417	11,645	56%	386,587
Or.	222	508802	290991	81204	215080	78825	181840	278,284	54%	804,188
Or.	287	2849	1188	870	554	388	870	1,424	54%	808,818
Or.	212	3837	0	1087	870	712	949	1,937	53%	910,455
Or.	249	78888	31748	11881	28834	8845	27241	41,395	52%	989,410
Or.	247	32874	0	1147	18887	3854	11822	16,804	51%	1,022,384
Or.	283	52070	28859	9788	18131	3788	21882	25,897	50%	1,074,494
Or.	288	81370	42148	21708	23287	7888	37837	44,993	49%	1,188,824
Or.	235	3242	1147	188	1423	1483	198	1,581	49%	1,188,058
Or.	219	88880	32895	8212	23090	11188	23090	32,302	48%	1,238,848
Or.	207	108880	59701	42739	8303	30048	24790	51,042	48%	1,341,828
Or.	261	58888	24831	17001	11188	5178	28859	28,180	47%	1,401,424
Or.	259	38808	18738	4428	13880	3914	18885	18,108	47%	1,440,328
Or.	208	81787	20184	11428	18447	18340	17782	27,873	48%	1,502,088
Or.	223	84840	8878	13087	15873	9884	24780	29,080	48%	1,588,828
Or.	228	50133	22852	8342	13877	18571	8342	22,219	44%	1,617,059
Or.	201	108882	77483	18408	30897	48021	18888	47,405	48%	1,727,051
Or.	288	8421	3478	1028	2570	119	4888	3,888	43%	1,738,472
Or.	284	8819	4428	1819	1740	1821	3084	3,888	41%	1,744,081
Or.	287	187428	63457	40723	24187	32778	58119	84,820	41%	1,801,527
Or.	216	514	388	40	188	0	318	188	39%	1,802,041
Or.	208	5877	3888	1502	854	3123	188	2,056	38%	1,807,418
Or.	284	8173	3183	40	3381	2888	3084	3,401	37%	1,818,591
Or.	285	238821	107148	8288	82278	71483	78837	88,882	37%	2,155,512
Or.	251	1888	503	188	474	0	1188	872	36%	2,157,370
Or.	245	78837	22289	277	28032	42384	8145	28,309	38%	2,238,207
Or.	248	2214	0	514	188	872	712	712	32%	2,238,421
Or.	244	28138	8856	0	8283	18803	4072	8,283	28%	2,287,880
Or.	253	88880	23050	119	18528	30789	12414	18,845	28%	2,327,419
Or.	250	102838	25778	4078	24275	42188	32143	28,348	28%	2,430,256
Or.	227	100779	47048	2848	28888	44788	28289	27,718	28%	2,531,054
Or.	228	38774	18848	2481	8088	17040	12217	10,517	28%	2,570,808
Or.	231	3838	2254	0	888	2530	318	988	28%	2,574,843
Or.	238	47781	15488	0	11387	24038	12338	11,387	24%	2,622,404
Or.	270	8128	1423	988	438	1881	2888	1,423	23%	2,628,832
Or.	262	28089	8281	1384	5337	8883	12418	8,721	23%	2,657,831
Or.	208	10819	2018	2333	40	3893	3884	2,373	23%	2,687,980
Or.	229	8178	4191	188	1819	8288	908	1,977	22%	2,677,123
Or.	228	2788	1502	0	854	1483	751	554	20%	2,678,881
Or.	241	18373	8858	0	3838	12217	3321	3,838	20%	2,688,284
Or.	288	327523	131858	37895	18012	222079	48777	64,007	18%	3,026,787
Or.	271	1877	0	198	119	751	808	317	18%	3,028,784
Or.	204	34041	18881	1028	3875	28848	2481	4,903	14%	3,082,805
Or.	280	3084	0	0	435	2283	358	435	14%	3,088,889
Or.	283	4230	237	0	854	1888	1779	554	13%	3,070,119
Or.	288	20282	8888	1821	751	14888	2888	2,372	12%	3,080,401
Or.	202	23820	18888	870	1888	20008	1188	2,728	11%	3,114,321
Or.	237	1107	438	0	119	78	908	119	11%	3,118,428
Or.	211	1238	0	78	40	435	872	119	10%	3,118,854
Or.	238	7188	1700	0	474	8337	1384	474	7%	3,123,880

White Chuck

Elk River

LSR_GERA.wb1

State	LSR No.	Fed Acres	MMHab. Acres	Med/Lrg Con SS	Med/Lrg Con MB	Small Con	Other Seral	Total Med/Large Conifer	Percent of LSR in Med/Large Conifer	Cummulative Total Fed LSR Acres
Or.	232	7196	2284	0	277	5377	1842	277	4%	3,131,048
Or.	242	30839	3400	0	1147	27360	2333	1,147	4%	3,181,886
Or.	243	3123	316	0	40	2058	1028	40	1%	3,185,006
Or.	238	1305	40	0	0	1188	119	0	0%	3,188,313
Or.	234	40	0	0	0	0	40	0	0%	3,188,353
Or.	203	4112	2670	0	0	3786	318	0	0%	3,170,486
Or.	240	388	119	0	0	358	0	0	0%	3,170,821

LSR_SERA.wb1

State	LSR No.	Fed Acres	MMHAB Acres	Med/Lrg Con 88	Med/Lrg Con MS	Small Con	Other Serai	Total Med/Large Conifer	Percent of LSR in Med/Large Conifer	Cumulative Total Fed LSR Acres
Ca.	308	435	395	0	395	0	40	395	91%	435
Ca.	350	13353	5342	0	11891	0	1502	11,891	89%	13,798
Ca.	355	1898	533	0	1891	0	237	1,891	85%	15,898
Ca.	355	14905	1621	0	12454	0	2451	12,454	84%	30,801
Ca.	328	1107	988	0	909	0	198	909	82%	31,708
Ca.	301	188	158	0	158	0	0	158	80%	31,866
Ca.	328	1700	791	1344	0	0	198	1,344	79%	33,806
Ca.	346	51994	19057	0	48433	0	13561	48,433	78%	86,000
Ca.	304	117882	65117	18899	71006	0	28816	88,907	76%	213,262
Ca.	302	3282	2058	198	2393	0	712	2,491	76%	218,544
Ca.	344	16538	5417	0	11742	0	3708	11,742	76%	232,082
Ca.	307	65038	34478	10912	37839	0	8738	46,551	75%	267,120
Ca.	347	8978	4151	0	6822	0	2293	6,822	74%	308,095
Ca.	348	2412	514	0	1779	0	633	1,779	74%	308,807
Ca.	351	2728	1226	0	1937	0	791	1,937	71%	311,238
Ca.	363	39221	5377	0	27241	0	11584	27,241	69%	350,488
Ca.	346	8049	3123	0	4191	0	1858	4,191	69%	358,505
Ca.	305	95840	44765	30384	34911	2847	23988	65,275	68%	452,145
Ca.	330	85858	42680	55392	833	5693	16764	58,025	66%	537,703
Ca.	308	38198	14858	8184	18082	0	10639	24,276	64%	575,898
Ca.	341	2889	958	1700	0	79	909	1,700	63%	578,595
Ca.	358	101531	26252	317	63140	2531	35544	63,487	63%	680,116
Ca.	348	2135	870	0	1305	0	831	1,305	61%	682,251
Ca.	349	46534	21548	0	27983	0	18582	27,883	60%	738,785
Ca.	303	39814	13850	7552	15854	0	14808	23,408	59%	765,599
Ca.	353	83773	15418	277	37125	2288	24078	37,402	58%	832,372
Ca.	357	28071	4181	15538	0	1067	7158	15,538	55%	860,443
Ca.	354	48851	13719	198	25284	8777	12512	25,482	54%	907,284
Ca.	331	25252	4942	13188	0	1837	5614	19,188	50%	933,648
Ca.	342	8089	318	3044	0	40	2058	3,044	50%	939,695
Ca.	332	87080	22417	41474	0	5535	24871	41,474	48%	1,026,695
Ca.	362	4942	949	2333	0	814	949	2,333	47%	1,031,637
Ca.	310	97520	8579	15024	2670	1308	18803	17,594	47%	1,069,157
Ca.	309	68778	14312	28887	2993	3005	31589	30,680	46%	1,135,835
Ca.	335	102994	25925	48828	0	79	33330	45,826	44%	1,238,829
Ca.	359	2175	751	948	0	712	474	948	44%	1,241,104
Ca.	324	2530	0	1028	0	593	872	1,028	41%	1,243,634
Ca.	320	14471	1384	5815	158	317	7709	8,773	40%	1,258,106
Ca.	326	3598	0	1384	40	0	2058	1,424	40%	1,261,703
Ca.	313	29139	4982	8695	2412	5258	11980	11,110	38%	1,280,842
Ca.	339	3693	198	1483	0	0	1147	1,483	37%	1,294,838
Ca.	337	11308	2214	4072	0	0	2809	4,072	36%	1,305,143
Ca.	352	26412	8382	2214	7117	1861	15420	9,881	35%	1,332,558
Ca.	334	117859	17189	41358	0	3993	25501	41,358	35%	1,450,414
Ca.	323	1898	0	833	0	0	1287	833	33%	1,452,312
Ca.	311	43530	8579	12888	1306	2865	25134	14,194	33%	1,495,842
Ca.	338	5258	584	1700	0	40	2018	1,700	32%	1,501,100
Ca.	380	3400	1147	808	0	237	474	909	27%	1,504,600
Ca.	340	38034	2530	7691	2333	395	12781	9,624	26%	1,542,534
Ca.	312	11822	2254	1661	1344	277	8026	3,008	25%	1,554,388
Ca.	361	25422	2850	5993	158	2928	3321	6,851	23%	1,579,778
Ca.	315	33132	6010	3008	4033	633	17831	7,038	21%	1,612,910
Ca.	333	18784	1700	3479	0	791	2728	3,479	21%	1,629,674
Ca.	314	5458	1028	1107	0	158	3837	1,107	20%	1,635,130
Ca.	336	33725	3835	6803	0	474	11624	6,803	20%	1,688,855
Ca.	317	3381	830	593	0	0	2372	593	18%	1,672,216
Ca.	322	38944	809	5377	0	870	30087	5,377	14%	1,711,180
Ca.	318	3798	40	514	0	158	2888	514	14%	1,714,886
Ca.	358	4588	277	554	0	474	2451	554	12%	1,719,542
Ca.	319	32575	10693	3400	79	358	26727	3,479	11%	1,752,120
Ca.	325	830	0	79	0	119	554	79	10%	1,752,950
Ca.	321	830	0	40	0	0	712	40	5%	1,753,760
Ca.	318	11703	1423	277	0	79	10121	277	2%	1,755,483

*Attachment 5***"Crown Jewels" in Vento Bill 102nd Congress**

	<u>Acreage</u>	<u>National Forest</u>
1. Siouxson Creek	6,500	Gifford Pinchot, WA
2. Bourbon Creek	1,700	Gifford Pinchot, WA
3. Redwood	300	Siskiyou, OR
4. Elk River	17,000	Siskiyou, OR
5. N. Kalmiopsis	89,000	Siskiyou, OR
6. Gene Creek - South Lake Chelan	25,600	Wenatchee, WA
7. Opal Creek	6,800	Willamette, OR
8. White Chuck	5,500	Mt.Baker-Snoqualmie,WA
9. Foggy Dew	21,100	Okanagan, WA
TOTAL	173,200	

(4216)

MEMORANDUM TO: Lorraine Voles
FR: Will Stelle WS
RE: Job Estimates and the Clinton Forest Plan
DATE: 24 February 1994

First, I apologize for not alerting you and others here in the WH to the modelling issue before yesterday's mailing of the SEIS. It was my fault and I stand to blame on it.

Some background and talking points.

The final environmental impact statement for the President's forest plan was mailed out yesterday in accord with a court imposed schedule for getting a final plan into place by the end of next month. Under Federal law, a final EIS needs to be out for public review for at least 30 days before a final "record of decision" on the plan can be issued -- which we are required to do by Judge William Dwyer by March 31st.

The final plan make numerous adjustments in the earlier proposal, the most significant of which is to expand the buffer strips along streams to improve the survival ratings for a number of species which, under the earlier proposal, were unsatisfactorily low.

The fundamental point with the final EIS is that we have improved significantly the adequacy of the plan to meet legal standards without a significant impact on the anticipated timber program -- a relatively modest drop in average yields from 1.2 billion board feet to 1.1 BBF. Had we not made these changes, we would have been vulnerable to legal challenges which, in turn, might have cost us our primary objective -- to get the injunction lifted and get the timber program out of the courts and back into the agencies.

Two negative points. First, in reviewing the draft EIS the Team discovered that it had made a mistake in the way it had run the computer model for estimating job losses. The Team corrected the mistake, and it caused an increase in the estimated job losses by 4,000 -- from 5,000 to 9,000. The reduction in timber yields of 100,000 board feet will result in an additional 1,000 estimated losses -- totalling an estimate 10,000 under the President's plan.

TALKING POINTS

Several points deserve emphasis. First, this revised estimate has almost nothing to do with changes in the plan, but is based on a simple error in the way the models were run. We've corrected the error, and we apologize for it.

Secondly, we don't like the mistake any more than you do, but we made, we've corrected it, and we are playing it fair and square and up front. No funny business, no tricky numbers.

Thirdly, the President has always understood that the transition to a sustainable forest plan that met legal muster would be tough, which is why he has pledged a major community assistance and worker retraining program to help with that transition (1.2 billion over 5 years). That remains the case, and we remain all the more committed to it.

Finally, these numbers about job losses in the timber program need to be understood in context. They are estimated jobs in a sustainable timber program verse what employment levels were in 1992 under a sale program that the courts found was illegal. Right now, there is no timber sale program to speak of, and no jobs being supported or generated by it. If we do nothing, we will go to zero because the entire program is and has been tied up in the courts because of the failure of the prior Administration to face reality.

The President's entire objective here is to get forestry out of the courts and back into the agencies, where we can resume a sustainable sale program and build back a sustainable timber economy. If you want to see job losses, do nothing.

POINT TWO. The second point is whether the Administration will be able to sell the 1.1 billion board feet that it estimates is an average annual sustainable sale level in this calendar year.

The answer is that it is going to take time to gear up the sale program after we get the injunction lifted. We can't go from zero to 1.1 billion instantly, but we will do everything we can to move sales as fast as possible. Will it be 1.1 billion? Probably not.

cc. K. McGinty
K. Sweeney

THE WHITE HOUSE

WASHINGTON

MEMORANDUM TO: Lorraine Miller
Barbara Chow
Marcia Hale
Keith Mason
Tom Epstein
Lorraine Voles

FR: Will Stelle 

RE: Release of the Final Environmental
Environmental Impact Statement for
Forestry in the Pacific Northwest

DATE: 17 February 1994

We are scheduled to release the final EIS on the President's forest plan for the Pacific northwest Wednesday, February 23rd in a series of simultaneous briefings for the delegation on the Hill and relevant committee staff and for regional press and state officials in Portland. The Hill briefing is being set up by DOI/USDA Congressional Affairs. As currently planned, we would not be undertaking any specific press activities from here -- apart from having the appropriate Assistant Secretaries take calls as needed.

The changes that have been made in the earlier proposed plan are overall not of major significance, but they will have site specific impacts on the Olympic Peninsula (Rep. Dicks) and southwest Oregon (Rep. DeFazio).

The regional people are preparing a set of talking points and briefing materials that we will have available at the beginning of the week, and which we can make available to you if helpful.

We are seeking to downplay the significance of this action because the major action will be the release of the final "record of decision" at the end of March -- as required by the court schedule.

cc. K. McGinty

B - WU > Telle
From - Dan Knowles

Will -

I've had two conversations with the SEIS Team regarding species mitigations in lieu of full SAT. They will fax to me tonight a list of the 16 vertebrate species; an explanation of why they scored poorly in previous viability assessments; an indication as to what they need (biologically) in order to pass the screen (80% of "A"); the alternative mitigations, if any, that will get them past the screen; some idea of their range; and the PSQ cost of the alternate mitigations. (Also, similar info for non-vertebrates.)

They will also fax to me tonight a description of the PSQ and viability assessments of not applying full SAT in "areas with high stream density". We agreed on this (rather than "in the Coast

Range") because we want to take advantage of high stream densities wherever they occur.

It will be tomorrow before they can give me good information on the use of roadless areas in LSRs as the best way to identify ^{old-growth} areas we don't want to be subject to salvage. They hope to be able to give me an average estimate at the same time.

I'll be at home - 703/750-1361 - soon, so call if you have questions. Otherwise, I'll talk to you in the morning.

Thx - Don Knowles

PS I've also asked them to fax this stuff (and Ellen Athes) * DAVID & JWT/ Jim Lyons, directly to you, as well.

A CRITIQUE OF THE CLINTON FOREST PLAN

**THE WILDERNESS SOCIETY
NATIONAL WILDLIFE FEDERATION
NATURAL RESOURCES DEFENSE COUNCIL**

OCTOBER 1993

PREFACE

For years scientists have warned that continued logging of the remaining ancient forests in the Pacific Northwest would have devastating ecological consequences. And for years the federal government ignored the warnings. Rather than make the necessary changes, the government attempted to continue unsustainable timber production by denying the scientific evidence and falsely portraying the policy debate over ancient forests as a choice between owls and jobs.

The Clinton Administration's efforts to develop an ecologically sound plan for Northwest federal forests are a welcome and important turning point in the ancient forest debate. President Clinton has devoted personal attention to the problem and promised to do what is needed to protect the long-term health of the forests and streams. Literally hundreds of scientists were involved in the process of developing and evaluating a range of options, from which the draft plan was derived.

As discussed in this critique, the draft plan is a major step toward an ecologically sound blueprint for Northwest forests. But it contains a number of serious flaws that leave the plan well short of the goal of preserving healthy forests and streams. Most important, too much ancient forest is slated for logging, forest reserves are not truly protected, streams are not adequately buffered, and many landslide-prone areas remain vulnerable.

The principal authors of this report are Forest Resource Analyst Michael Anderson and Forest Ecologist Dr. Greg Aplet. Susan Balikov and Dr. Janice Thomson conducted the GIS analyses contained in the report. Dr. David Wilcove of the Environmental Defense Fund assisted in evaluating the viability analysis process used in evaluating alternatives.

Funding for this critique was provided by the Pew Charitable Trusts and the W. Alton Jones Foundation.

Karin P. Sheldon
Acting President
The Wilderness Society

Mark L. Shaffer, Ph.D.
Vice President
Resource Planning and Economics

EXECUTIVE SUMMARY

This critique evaluates the adequacy of the forest management plan proposed by the Clinton Administration in July 1993 to resolve the controversy over federal forest management in the Pacific Northwest. Timber sales in old-growth forests administered by the U.S. Forest Service and Bureau of Land Management (BLM) have been halted by a series of court decisions declaring current agency plans legally inadequate. Following a day-long Forest Conference in Portland, Oregon, President Clinton instructed Administration officials to develop a scientifically and legally sound plan. The draft plan, called Option 9, was one of 10 options developed by a Forest Ecosystem Management Assessment Team (FEMAT). The 10 options are evaluated in a draft environmental impact statement (DEIS) and in a lengthy report by the FEMAT.

Overview of the Plan

The draft plan divides the previously unprotected federal forest lands into four basic management categories. **Late-successional forest reserves** are intended to provide a system of large habitat areas for old-growth species. Under Option 9, considerable thinning and salvage logging would be allowed in forest reserves. **Riparian reserves** are strips of protected land along streams, lakes, and wetlands. **Adaptive management areas** are areas where experimentation would be encouraged. The rest of the unprotected forest would be designated as "**matrix**" lands and be managed primarily for timber production. Under Option 9, 37 percent of the previously unprotected lands would be in forest reserves, 17 percent in riparian reserves, 9 percent in adaptive management areas, and 37 percent in the matrix.

Forest Ecosystem Protection

Our evaluation found a number of important flaws in the Clinton plan's analysis and forest ecosystem management strategy. The overall effect of Option 9 would be devastating to the ecological integrity of the region's old-growth forests.

* Option 9 would allow much of the ecologically significant old growth to be destroyed. A congressionally-established scientific panel in 1991 identified the remaining areas of ecologically significant late-successional and old-growth forests (LS/OG 1 and 2) in the Pacific Northwest. Based on our geographic information system (GIS) analysis of Option 9's reserves and the scientific panel's LS/OG 1 and 2 reserves, we estimate that 1.6 million acres of ecologically significant LS/OG forests would be unprotected from logging under Option 9. This amounts to 25 percent of all previously unprotected LS/OG 1 and 2 forests.

* Option 9's forest reserves are inadequate to ensure the survival of spotted owls and other old-growth species. The proposed reserve system protects half a million fewer acres of suitable owl habitat than the system proposed in 1992 by the Spotted Owl Recovery Team. Less than 10 percent of the recovery team's proposed owl reserves contained sufficient old-growth habitat to sustain stable owl populations in the long term. Option 9's reserves evidently would provide even less protection to the owl and other species.

* The plan does not adequately take into account the dynamic nature of forest ecosystems. The plan's reserve system assumes that fire and other natural disturbances will not have a significant impact on current and future old-growth forests. This assumption appears to be little more than wishful thinking, especially with respect to forest reserves in highly fire-prone areas of the region. A more realistic approach would be to increase the number and size of reserves in order to ensure sufficient old-growth habitat to maintain ecosystems and the viability of plant and animal species.

* Proposed fire management in reserves is misguided. Thinning, burning, and other fuel-reduction techniques would lead to a direct reduction in old-growth habitat quality by eliminating multi-storied canopy conditions. Construction of fuelbreaks would increase habitat fragmentation and pose increased threat to species that require forest interior habitat. Moreover, use of chain saws and other equipment for purposes of fire-reduction could actually increase the risk of severe fire.

* Proposed thinning and salvage in reserves amount to risky experimentation. There is no empirical evidence that thinning will accelerate development of old-growth characteristics. On the other hand, there is ample evidence of fire hazards, insect and disease spread, and watershed disturbance associated with extensive thinning operations. Salvage logging would have even greater adverse impacts on old-growth forest conditions. Salvage operations would remove ecologically valuable coarse woody debris and leave small stems that are most likely to fuel fires. The appropriate place to experiment with thinning and salvage is outside of reserves, as proposed by other scientific panels.

* Management guidelines in the matrix would not protect ecosystem values. Interior old-growth conditions would be entirely eliminated from the matrix, and residual patches of old growth in cutting units would be so small and isolated as to be of little ecological value. The plan allows continued use of traditional intensive management practices such as fertilization, precommercial and commercial thinning, and pruning. The overall effect would be a highly fragmented landscape with small patches and strips of old-growth trees, but dominated by small trees and essentially devoid of old-growth ecosystem characteristics. The plan claims that 180-year logging rotations would be used in

California conifer stands, but those stands would actually be cut on about 120-year rotations.

*** The FEMAT's assessment of the ability of different options to protect the LS/OG forest ecosystem is seriously amiss.** Incredibly, the team rated Option 9, which allows substantial logging of old growth, as high or higher than the option that protects all remaining old growth. The team's assessment was based on a skewed rating system that downplays the importance of retaining the extant old growth and overemphasizes the ability of thinning and other experimental "restoration silviculture" techniques to accelerate development of old-growth characteristics. The team also boosted Option 9's ranking based on speculation that adaptive management areas will produce greater knowledge about forest ecosystem management, even though much of the old growth in these areas would be destroyed.

*** The plan lacks recommendations for the management of those non-federal lands that are essential to the health of LS/OG forest ecosystems and to the viability of species that rely on them.** The plan's reserve system is based entirely on federal lands. Yet, as pointed out by previous scientific panels and the spotted owl recovery team, certain non-federal lands are essential for the viability of the owl. The same is very likely to be true for many other species.

Aquatic Ecosystem Protection

The Clinton plan seeks to protect habitat for salmon and other riparian-dependent species through an "aquatic conservation strategy." The major elements of the strategy are to establish riparian reserves along all streams, limit road construction and require watershed analysis in key watersheds, and undertake an ambitious watershed restoration program.

*** The DEIS and FEMAT report lack important information about the plan's impact on salmon.** Our recently completed study of Pacific salmon and federal lands fills significant information gaps relating to salmon. Based on GIS analysis of our salmon data and Forest Service data on Option 9, we estimate that 3.4 million acres of land within the salmon's existing range are located outside of reserves and would be subject to logging and road building. Moreover, only 30 percent of the non-reserved land containing salmon habitat is inside key watersheds; the remainder would be subject to extensive land-use disturbance without the safeguards provided in key watersheds.

*** Stream habitat on federal lands is in worse condition than the DEIS and FEMAT report indicate.** Two-thirds of BLM's streams are so degraded that fish productivity is only 10 to 50 percent of potential. Available data indicate that national forest streams are mostly in poor condition in areas that have been logged. Consequently, much stronger measures to protect and restore habitat are needed than those proposed.

* **The draft plan fails to protect a large amount of steep, unstable land.** Excessive sediment produced by logging and road building on steep, unstable slopes is a major cause of stream damage. Our GIS analysis of slope steepness data indicates that roadless areas and ancient forests tend to be located on steeper slopes than federal lands generally. We estimate that about 1.5 million acres of land located on steep slopes would not be protected from logging under the draft plan.

* **The plan provides no assurance that unstable lands will be identified.** In theory, the unstable lands would be identified and protected through the watershed analysis process. But watershed analyses are not required outside of key watersheds and roadless areas; therefore, there is no formal mechanism for locating many unstable lands. In addition, the Forest Service and BLM have been notoriously reluctant to remove unstable lands from the timber base.

* **"Half-SAT" riparian reserves are inadequate.** Option 9 provides interim riparian buffers along intermittent streams outside key watersheds that are only half the size recommended by agency fisheries scientists. Information in the FEMAT report makes clear that the proposed riparian reserves would only be adequate to protect ecological values of intermittent streams in areas without steep slopes. In steep terrain, the necessary riparian width is two to four times larger than the width proposed in Option 9.

* **Thinning and salvage activities in reserves would be detrimental to watershed restoration efforts.** A key element of the Aquatic Conservation Strategy is to restore watersheds by closing and decommissioning unnecessary logging roads. But proposed management activities in forest reserves would require continued or even greater road access, making watershed restoration difficult or impossible in reserves.

* **Watershed analysis is no substitute for protection.** Previous Forest Service efforts offer scant hope that watershed analysis will result in protection of aquatic ecosystems. On the contrary, the agency has tended to use watershed analysis to justify logging watersheds that are in relatively good condition. An ecosystem-oriented approach should protect the remaining high quality habitat and prevent further degradation of other stream habitats.

Species Viability Assessment

To help the Administration select a scientifically and legally defensible plan, the FEMAT evaluated each option's ability to satisfy the legal requirement of maintaining species viability. The team identified more than 1,374 plant and animal species closely associated with old-growth forest habitat and estimated the viability prospects of more than 1,000 of those

species. Based on the FEMAT analysis, it appears that Option 9 would threaten the survival of at least 403 old-growth species.

*** The DEIS fails to assess cumulative impacts on species.** The FEMAT made a crucial mistake by intentionally excluding from its species viability assessments any impacts associated with management activities and environmental conditions outside of federal lands. The team specifically instructed scientists on viability panels to "assume that conditions other than habitat on federal lands are adequate to provide for well-distributed, stabilized populations." Injecting this absurd assumption into the assessment process undoubtedly inflated the viability ratings of many species. It also misleads the public and policy makers into believing that much of the remaining old-growth habitat can be destroyed without seriously risking the loss of species.

*** The viability assessments lack scientific documentation.** While the species viability assessment process involved many knowledgeable experts, the viability analysis lacks any estimate of population sizes of the various species. Data and population viability models are available for at least some species to provide a scientifically based assessment of the options. Until more information is available, the prudent approach is to protect as much old-growth habitat as possible.

*** Option 9 violates legal requirements for maintaining species viability.** Even ignoring the serious flaws in the FEMAT's viability analysis, Option 9 does not comply with the National Forest Management Act's species viability rule. More than 400 species, including salmon and several other vertebrate species, would fall below the FEMAT's threshold of viability if Option 9 were adopted.

Conclusion and Recommendations

The FEMAT has contributed significantly to society's understanding of the species that rely on old-growth forests, the severity of the threats to those species, and some of the steps needed to ensure species viability. The team's work represents a major scientific advancement in the debate over old-growth forests. However, important flaws in the team's assumptions and analysis have resulted in a conservation strategy that is deficient in several fundamental respects.

The Clinton Administration should revise the DEIS and its preferred alternative based on these comments and on the following recommendations:

*** Expand the old-growth reserve system substantially to protect all remaining stands of ecologically significant old growth.**

*** Allow no thinning, salvage, road development, or other logging activity in reserves.**

- * Forests that are outside the reserve system and are otherwise suitable for timber management should be managed on at least 200-year rotations. Experimental thinning, salvage, and adaptive management should only be conducted in areas outside reserves.
- * Eliminate the adaptive management area category from the plan and add all ecologically significant old growth in those areas to the forest reserve system.
- * Include recommendations for the management of non-federal lands as necessary to ensure forest ecosystem integrity and species viability.
- * Treat key watersheds and roadless areas as reserves to be managed for conservation of aquatic biodiversity by removing them from the suitable timber base, prohibiting new road construction, and decommissioning most existing roads.
- * Remove all forest land on steep and moderately steep slopes from the suitable timber base until specific sites are certified as having low landslide risk.
- * Apply Riparian Reserve Scenario 1 (full SAT) permanently to all streams, including intermittent streams outside key watersheds.
- * Include in the viability ratings the cumulative impacts of both federal and non-federal actions on species viability, taking into account the true condition of habitat on non-federal lands.
- * Viability assessments based on professional judgment should be accompanied by at least crude population estimates for species that have low population densities and large ranges or small total population sizes.
- * The objective of the management plan should be to provide at least a 95 percent likelihood that all old-growth species will remain viable for at least the next 200 years.

I. INTRODUCTION

On July 1, 1993, the Clinton Administration proposed a forest management plan designed to resolve the long-standing controversy over federal forests in the Pacific Northwest. The plan would guide forest management activities on lands in the region administered by the U.S. Forest Service and Bureau of Land Management (BLM, see Figure 1).¹ In late July, the Forest Service and BLM issued a draft environmental impact statement (DEIS, USDA Forest Service and USDI Bureau of Land Management 1993) describing 10 alternatives and identifying Option 9 as the agencies' preferred alternative.² A final plan is expected in January.

The Clinton plan would supercede existing Forest Service and BLM plans, which have been declared legally inadequate by the federal courts. In 1989 and again in 1991, Judge William Dwyer halted Forest Service timber sales in the Pacific Northwest because the agency's regional plan did not provide adequate old-growth forest habitat to ensure long-term viability of the northern spotted owl. Judge Dwyer strongly criticized government authorities for engaging in "a remarkable series of violations of the environmental laws" and a "deliberate and systematic refusal ... to comply with the laws protecting wildlife." The Forest Service revised its plan in 1992 based on a spotted owl conservation strategy developed by an Interagency Scientific Committee (ISC, Thomas et al. 1990).³ However, Judge Dwyer rejected the plan because it erroneously assumed that the BLM also would follow the ISC strategy and it failed to assess the impacts on species besides the spotted owl that rely on old-growth habitat. In March 1993, a Forest Service Scientific Analysis Team (SAT) recommended changes in the agency's plan (Thomas et al. 1993a).

¹Forest Service lands covered by the plan consist of 19.4 million acres in 17 national forests in western Washington, western Oregon, and northern California. BLM lands in the planning area consist of 2.7 million acres in western Oregon and northern California.

²The terms "Option 9," "draft plan," and "Clinton plan" are all used interchangeably in this critique to refer to the preferred alternative in the DEIS.

³The ISC strategy calls for establishing a system of large reserves on federal lands to provide nesting, roosting, and foraging habitat for spotted owls, together with guidelines to maintain partial forest cover on non-reserved lands to provide dispersal habitat.

The BLM, too, has been unable to develop a legally adequate forest management plan. Since 1988, BLM timber sales have repeatedly been stopped by court injunctions. In 1991, after the U.S. Fish and Wildlife Service rejected numerous BLM timber sales because they would jeopardize the spotted owl's survival, the BLM sought a special exemption from requirements of the Endangered Species Act. The agency's request was partially granted by the Bush Administration's Endangered Species Committee, but court injunctions continued to block logging of BLM owl habitat. In 1992, the BLM released draft plans for each of its six districts in western Oregon.

In April 1993, President Clinton convened a day-long Forest Conference in Portland, Oregon, to seek a solution to the controversy over Northwest federal forest policy. At the conclusion of the conference, the President directed the federal agencies to develop a comprehensive plan to end the policy stalemate. He stated that the plan should be "scientifically sound, ecologically credible, and legally responsible." The Administration instructed a Forest Ecosystem Management Assessment Team (FEMAT) to take an "ecosystem approach" in identifying management options that "attain the greatest economic and social contribution from the forests of the region and meet the requirements of the applicable laws and regulations" (Thomas et al. 1993b, p.ii; hereinafter cited as "FEMAT"). The 10 options and related information generated by the FEMAT were the basis for the alternatives and environmental analysis presented in the DEIS.

This critique evaluates the adequacy of the Clinton plan and the underlying analysis contained in the DEIS and FEMAT report. Based on our review, it is evident that the Clinton plan, while clearly an improvement over previous plans, fails to provide adequate protection of old-growth forest and stream ecosystems. Consequently, literally hundreds of species that rely on these ecosystems could face extinction if Option 9 is implemented.

The critique concludes with a set of recommendations designed to protect and restore the unique ecosystem values of federal forests. The Administration should incorporate these recommendations, along with the new information presented in this critique, into its final plan.

II. OVERVIEW OF THE CLINTON FOREST PLAN

This section provides a brief overview of the land allocations and management direction in Option 9. Subsequent sections contain additional information about the draft plan and the FEMAT's analysis of the plan's impacts on old-growth forest ecosystems and species.

Land Allocations

The FEMAT report and DEIS divide all federal lands in the region into one of six basic management categories: congressional reserves (national parks, wildlife refuges, wilderness areas, etc.), administrative withdrawals (such as scenic areas), late-successional forest reserves, riparian reserves, adaptive management areas, and matrix. Congressional reserves do not vary among alternatives, and no timber production is proposed in administratively withdrawn lands. Late-successional reserves are large blocks of land to be managed principally as habitat for northern spotted owls and other old-growth dependent species. Riparian reserves are protected strips of land along streams and lakes managed primarily to provide habitat for fish and other species associated with riparian areas. Adaptive management areas are large tracts where experimental forest management methods would be encouraged. The matrix lands consist of all areas located outside the other five management categories; lands in the matrix would primarily be managed for timber production.

In addition to the six management categories, the FEMAT designated a system of "key watersheds." The main purpose of key watersheds is to provide secure habitat conditions for fish populations. Under Option 9, the late-successional forest reserve system is concentrated in key watersheds. Specific management direction for these watersheds is discussed in Section IV of this critique.

About 9 million acres of national forest and BLM land in the region are already legislatively or administratively protected,⁴ leaving 13.2 million acres (or 60 percent) potentially open to logging and other management activity. Under Option 9, 4.89 million acres (37 percent) of previously unprotected national forest and BLM land would be managed as late-successional reserves, and about the same amount -- 4.85 million -- would be managed as matrix (DEIS, p.2-19).⁵ Another 2.23 million acres

⁴Another 2 million acres of federal land are protected in national parks.

⁵The DEIS and FEMAT report generally report a greater amount of acreage in late-successional reserves by counting as reserves all areas where reserves overlap with administratively withdrawn

(17 percent) would be in riparian reserves and 1.26 million acres (9 percent) in adaptive management areas.

Management Direction

Option 9 calls for significant timber management activity in late-successional forest reserves in the form of thinning and salvage logging. The forest reserves typically encompass a patchwork landscape of forests in different successional stages, including sizeable amounts of land that have been clearcut and now support second-growth stands. The draft plan allows thinning of stands less than 80 years old in reserves, including stands naturally regenerated after fire or blowdown as well as stands planted after logging. Additional management activities intended to reduce fire risk are permitted in eastern portions of the region. Salvage logging of dead trees (regardless of age) is permitted in stands where tree mortality covers more than 10 acres. The forest reserve system is evaluated in Section III.

The width of riparian reserves under Option 9 varies depending on the type of adjacent stream and, in the case of intermittent streams, on whether the stream is located in a key watershed. Perennial, fish-bearing streams receive a buffer equal to twice the potential height of trees in the area⁶ or no less than 300 feet. Buffers along other perennial streams would be one potential tree height or at least 150 feet. Intermittent streams located in key watersheds would have buffers of one potential tree height or at least 100 feet, but outside of key watersheds the buffer width would be half this size. Riparian reserves, key watersheds, and other elements of the draft plan's aquatic conservation strategy are assessed in Section IV.

Lands in the matrix, including old-growth forests, would generally be available for logging, subject to restrictions that vary among different areas and ownerships. In most national forests in Washington and Oregon, 15 percent of the trees in a logging unit would be retained, at least half in patches and the rest spread across the unit. According to the DEIS, matrix lands in California national forests would primarily be managed on 180-year rotations. Some BLM lands in the matrix, designated as "connectivity/diversity blocks," would be managed on 150-year rotations with 12 to 18 trees retained per acre; but most BLM

lands. When counted in this manner, the amount of late-successional reserves increases to 7.05 million acres.

⁶On most federal lands in the region west of the Cascades, the average potential tree height is about 170 feet (FEMAT, p.V-35). An exception is the Siuslaw National Forest, where the potential tree height is 250 feet. East of the Cascades, the potential tree height is about 110 feet. The riparian buffer widths are expressed as slope distances, which tend to be shorter than the horizontal distances commonly used.

matrix land would be logged on short rotations leaving 6 to 8 trees per acre. The draft plan provides no restrictions on logging of matrix lands in three national forests -- the Siuslaw in Oregon and the Olympic and Mount Baker-Snoqualmie in Washington. Management of the matrix is critiqued in Section III.

III. FOREST ECOSYSTEM PROTECTION

This section analyzes the Clinton plan's strategy for maintaining a viable old-growth forest ecosystem. While the DEIS and FEMAT report give Option 9 high marks for ecosystem protection, our review indicates that the plan is, in fact, inadequate to conserve the old-growth ecosystem.

Lack of Protection for Ecologically Significant Old Growth

In 1991, two congressional committees formed the Scientific Panel on Late-Successional Forest Ecosystems (Johnson et al. 1991, commonly referred to as the "Portland Panel") to identify ecologically significant late-successional and old-growth (LS/OG) forests within the range of the northern spotted owl and to develop management alternatives. The Portland Panel identified three categories of LS/OG forests: "most ecologically significant" (LS/OG 1), "ecologically significant" (LS/OG 2), and other (LS/OG 3). The maps and analysis of LS/OG forest produced by the Panel formed the basis for several of the options evaluated by the FEMAT. Option 2 is the only option that would protect all of the ecologically significant LS/OG forest (LS/OG 1 and 2) identified by the Portland Panel, other than Option 1, which protects all LS/OG forest.

According to the DEIS, the late-successional forest reserves of Option 9 include "some or parts of LS/OG 1 and LS/OG 2" (DEIS, p.2-40). However, neither the DEIS nor the FEMAT report discloses how much of the ecologically significant old growth is or is not included in Option 9's "integrated" reserve system.

In order to determine how much of the ecologically significant LS/OG forest was omitted from Option 9's reserves, we utilized our Geographic Information System (GIS) to analyze digital data provided by the Forest Service on Options 2 and 9. Our GIS analysis of the two options indicates that about 2.2 million acres of LS/OG 1 and 2 are outside Option 9's late-successional forest reserves. Assuming that approximately 27 percent of the area outside forest reserves is protected in riparian reserves, we estimate that 1.6 million acres of ecologically significant LS/OG forest would be subject to logging under Option 9. This amounts to 18 percent of all LS/OG 1 and 2 forests and 25 percent of all previously unprotected LS/OG 1 and 2 forests.

Inadequate Habitat for Spotted Owls

Like the myriad plans and strategies that preceded it, the FEMAT options are all based largely on a plan for the conservation of the northern spotted owl developed by the ISC (Thomas et al. 1990). Thus, impacts on the spotted owl are fundamental to an evaluation of the draft plan's adequacy to

conserve the late-successional forest ecosystem in the range of the owl. And because the owl has proven to be a useful indicator of its habitat condition, plan deficiencies in owl conservation can be expected to apply to other components of the ecosystem as well. Shortcomings of various options are well illustrated by examining the effect of the plan on the northern spotted owl.

Unfortunately, the information provided in the DEIS and FEMAT report provide very little information about the habitat conditions for the owl provided by the various options. Consequently, analysis of the FEMAT options must take into account information provided in the 1992 draft spotted owl recovery plan (as the final plan has not been released to the public), upon which many of the FEMAT alternatives are based. According to the recovery plan, to provide for the owl, a late-successional reserve network must be composed of clusters of owl habitat large enough to support relatively stable populations of the owl and be close enough to other such clusters to allow for successful dispersal of owls from one cluster to another (USDI 1992). Some of the modelling done by the ISC (Thomas et al. 1990, Appendix M) showed that cluster populations had to be on the order of 15 to 20 pairs for occupancy rates to stabilize. Coupled with some empirical evidence for other bird species, 20 pair clusters were selected as the optimal size for habitat conservation areas (HCAs).

The draft owl recovery plan identified 60 out of 196 Designated Conservation Areas (DCAs) that can be expected eventually to provide habitat for 20 or more pairs of owls. However, the plan acknowledged that only 17 (9 percent) of DCAs currently support 20 or more pairs and that current habitat will, at best, support only 33 clusters of 20 or more owl pairs in DCAs. The optimistic projections of habitat capability are based on questionable assumptions about habitat manipulation and disturbance. Thus, the draft recovery plan likely overstates the ability of the reserve system to support a stable population of owls.

Though the level of detail in the FEMAT report prevents such an analysis of plan alternatives, it does provide ample evidence that Option 9 would be significantly more risky than the already tenuous draft recovery plan for the spotted owl. Option 9 provides less habitat in a reserve system not specifically designed for owls, it significantly weakens recommendations that would provide connectivity among late-successional reserves, and it recommends management activities claimed to improve ecosystem viability that can be expected to reduce spotted owl viability.

The total acreage of DCAs recommended in the draft recovery plan was 8,484,900 acres -- 3,535,223 of which were suitable nesting, roosting, and foraging habitat (NRF). In contrast, Option 9 recommends only 7,052,600 acres in late-successional reserves (including administratively withdrawn lands) -- only 3,000,500 of which is NRF. Another 2,231,300 acres is in

riparian reserves -- containing 628,900 acres of NRF -- but these narrow strips of forest must be considered to be essentially all edge habitat and therefore of poor quality for owls. Studies have shown edge influences to extend 200 to 400 meters in from an exposed stand boundary (Franklin 1993). By comparison, the widest riparian reserves are generally less than 100 meters to the center. Thus, Option 9 provides over half a million fewer acres of good owl habitat than would have been provided by the recovery plan.

Additionally, very few reserves can be expected to support the 15 to 20 pairs of owls needed for population stability by the Forest Service's own analysis. The FEMAT report provides no assurance that the owl distribution problem (see above) has been addressed. Rather, the problem is likely exacerbated by the fact that the reserve system under Option 9 is a new, watershed-based approach not specifically designed to accommodate owls. The altering of reserve boundaries to accommodate additional species should result in the addition of reserve acreage to that recommended for owl recovery. Instead, Option 9 actually reduces reserve acreage.

Perhaps the most significant departure of Option 9 from the strategy recommended in the draft recovery plan is the abandonment of the "50-11-40 rule" in favor of riparian buffer strips and post-harvest volume retention standards. The intent of the 50-11-40 rule was to ensure the existence of owl dispersal habitat in all directions between reserves. The ISC felt this was necessary because owls appear to disperse in random directions, rather than follow habitat corridors. The strategy of Option 9, however, drops 50-11-40 and requires owls (and other species) either to follow corridors or disperse across open areas. As mentioned, the riparian reserves and 1/2 to 4 acre retention blocks that are supposed to provide dispersal habitat on Forest Service lands may consist entirely of edge habitat. The situation is potentially worse on BLM lands in the Oregon Coast Province, where owls are expected to hop across stepping stones of habitat in dispersal corridors between reserves. The low probability of success of corridors was reaffirmed by the Scientific Analysis Team (Thomas et al. 1993a) earlier this year.

The potentially serious impact of the loss of 50-11-40 on spotted owl viability can be seen by examining several plan alternatives. Two of the plan alternatives, Options 6 and 10, differ only in that Option 6 includes 50-11-40 as part of its strategy, while Option 10 does not. (This is the only pair of options for which one component is varied and all others are not, allowing direct assessment of a component on species viability.) Under Option 10, the northern spotted owl received only a 73 percent likelihood of achieving a population well distributed throughout its range. Adding 50-11-40 increased the viability rating by 12 points to 85 under Option 6, suggesting that, in the opinion of the FEMAT expert panel, 50-11-40 has a very significant effect on owl viability.

Curiously, under Option 9, which also lacks 50-11-40, owl viability is only 2 points lower than under Option 6. This despite the fact that Option 9 provides 408,000 fewer acres of NRF and has 200 fewer owl pairs in late-successional reserves than Option 6. Option 9 employs the same riparian prescription as Option 6, so presumably the matrix retention standards of Option 9 are expected to contribute almost as much to viability as the combined protection afforded by 50-11-40, 400,000 acres of habitat, and 868,000 acres of reserve (i.e. the difference in reserve acreage (including administrative withdrawals) between Options 6 and 9). This seems highly unlikely; the difference in viability rating between Options 6 and 10 suggests that 50-11-40 is far too important to owl viability to allow it to be abandoned for a post-harvest volume retention standard. Matrix management prescriptions should be revised to satisfy the intent of the 50-11-40 rule that fragmentation be minimized and continuity of mature forest habitat be maintained across the landscape.

Failure to Account for Ecosystem Dynamics

The approach to ecosystem management taken in the plan consisted of the sequential layering of conservation strategies for the northern spotted owl, the marbled murrelet, "old-growth ecosystems," watersheds, and at-risk fish stocks (FEMAT, p.II-85, figure II-31). The next step was to examine the combination of these strategies and adjust land allocations to accommodate the subjects of the four layers. Finally, mitigation measures, restoration, and adaptive management were added as components of the ecosystem management strategy.

Although this approach was constrained by the need to address the conservation of particular species, the FEMAT appropriately recognized important issues of ecosystem management. For example, the team addressed the multi-scale nature of ecosystems by recommending a hierarchical, watershed-based approach to planning. It also recognized the changing nature of ecological and social systems by recommending the adoption of adaptive management. Perhaps most importantly, the team acknowledged that "past conditions provide a reference point for current and future conditions and an opportunity for understanding processes that lead to the development and maintenance of the current late-successional ecosystem" (FEMAT, p.IV-55). These are important contributions to the emerging definition of ecosystem management.

Unfortunately, the approach taken here falls short of accomplishing ecosystem management by continuing the failed policy of requiring stasis from a dynamic ecosystem. One certainty that has emerged over recent decades is that ecosystems change. Ecosystem management requires recognizing forests as dynamic entities and maintaining ecosystem processes at multiple scales. By relying on reserves for late-successional forest and intervening land for early-successional habitat, the plan commits the age-old mistake of managing not for process but for state.

The planners ask the forest to remain in an idealized configuration over time against the uncontrollable forces that shape ecosystems.

The implications of this error affect virtually every aspect of the plan. The remaining late-successional forest in reserves is certain to erode under the forces of catastrophic disturbance; yet, no provision is made for the recruitment of replacement forest from the matrix. Consequently, the amount of old growth in the landscape is sure to diminish. The plan assumes that approximately 12.5 percent of the reserve network will be disturbed every 50 years, providing for a constant supply of old growth through time equivalent to 80 percent of the reserve network (FEMAT, p.IV-55). However, as the plan lacks an analysis of the pattern, intensity, and frequency of natural disturbance in these forests, this figure appears to be little more than wishful thinking. The FEMAT's assumption is especially tenuous in the East Cascades and Klamath subregions -- fire-prone areas that the draft spotted owl recovery plan identified as having a "very low" probability of maintaining owl habitat over the next century (USDI 1992). The certain erosion of habitat threatens all old-growth related species.

Ecosystem management should recognize the dynamics of ecosystems and use those dynamics as the basis for a management plan. Ecosystem dynamics, rather than species, should provide the template for management. A strategy that maintains ecosystem processes should provide adequate habitat for all native species. Species viability assessments should, in turn, be a check on the adequacy of the plan to provide habitat.

The approach taken by the FEMAT turned that process around. The habitat requirements of old-growth species were used as the basis for management, and the ability of those lands to accommodate change was assessed afterward. Thus, reserves had to be assumed to suffer only a limited amount of disturbance after their boundaries were determined. A true strategy for ecosystem management would protect the rare old-growth community to the extent possible while restoring processes to the remaining lands that will provide for the long-term maintenance of native biodiversity. The failure to accommodate change first and species viability second undermines the credibility of the FEMAT plan and indicates that additional reserves or matrix restoration are needed, particularly in the risk-prone subregions.

The proper approach to ecosystem management in the Pacific Northwest is to restore to the forest the dynamics that maintained long-term average forest conditions. The first step is to restore late-successional forest abundance and connectivity. Second, processes to maintain regional abundance in a dynamic landscape must be reintroduced. The FEMAT estimates that the long-term average abundance of late-successional forest was 60-70 percent of the forest area of the region, with a long-term minimum of approximately 40 percent. Thus, the most

effective conservation strategy is the one that restores late-successional forest to 40-70 percent of the landscape. Only Option 1, which protects all remaining LS/OG forest, begins to approach this objective.

Risky Fire Management in Reserves

In Appendix F of the draft recovery plan, Agee and Edmonds discussed the threats to long-term maintenance of high-quality owl habitat within DCAs. They broke the range of the northern spotted owl into three ecological subregions and discussed the disturbance ecology of each. Generally, they concluded that owl habitat in the West Cascades subregion (including the coast south to about Eureka) is relatively unthreatened by fire, wind, insects, or disease. However, the rest of the owl's range, comprising 7 of the 11 provinces, is now imperiled by the buildup of 100 years of understory fuels. They felt that in the East Cascades and Klamath subregions, the "probability of continued successful protection [of owl habitat] over the next century" is "very low" (USDI 1992, p.472, Table F.7). In response to this threat, they recommended an aggressive policy of forest protection, including active fuel load reduction (thinning and burning) and the construction of fuelbreaks. Consistent with these recommendations, the Clinton plan encourages extensive silvicultural activity, including thinning, underburning, and building of fuelbreaks, in the Eastern Cascades and Klamath provinces.

While the current drought-aggravated situation can certainly be explosive, the rationale for the proposed silvicultural activities is misguided on several counts. First, fuel reduction would lead to direct reduction in owl habitat quality. Agee and Edmonds acknowledged that reduction in fire risk will result in "a temporary to permanent reduction in preferred owl habitat" (USDI 1992, p.460). Nearly a century of fire exclusion in these dry forests has allowed the accumulation of small firs and Douglas-firs under a canopy of pines. It is this "artificially" created multi-storied stand that has created the fire risk (ladder fuels), but it has also created suitable owl habitat. Agee and Edmonds note that "opening the understory reduces the protection offered owls and at least temporarily (1 to 2 decades?) provides less optimum habitat." The effect of reducing habitat quality does not appear to have been factored into the plan.

Second, manipulation of vegetation may have secondary deleterious effects on habitat suitability. For example, Agee and Edmonds recommended construction of fuelbreaks, the objective being to "compartmentalize units by creating a zone of reduced fuel between them" (USDI 1992, p.461). Similarly, the FEMAT proposes that silvicultural treatments in reserves "should be designed to provide effective fuel breaks wherever possible" (FEMAT, p.III-35). However, creating "compartmentalized units" may lead to further habitat fragmentation, exacerbating an

already stressed situation. For example, the spotted owl recovery team noted that great horned owls, "the most commonly documented predator of spotted owls," are more common in the more fragmented parts of the spotted owl's range and "occupied areas that contained significantly less ... interior habitat" (USDI 1992, p.40). Similar effects on habitat quality are likely also to occur in the narrow strips of riparian reserves. The effects of fuelbreaks and other "protection" activities on habitat availability and/or quality are not adequately addressed in the plan.

Third, the very act of entering a stand to conduct protection activities carries with it many risks of unintentional damage to old-growth habitat. Logging (fuelbreak construction and fuel reduction) involves the use of chain saws and other equipment that can throw sparks or otherwise ignite fires. Agee and Edmonds acknowledged that the use of prescribed fire to reduce fuels is risky and can lead to fires "of high severity" (USDI 1992, p.461). In addition, thinning can produce conditions conducive to insect outbreak. Cut trees left on site can attract bark beetles, and large enough accumulations can fuel an outbreak. Finally, cutting and skidding can expose the stand to disease. Many root diseases are commonly associated with exposed stumps, and can spread through the roots to adjacent green trees. Wounds created by falling trees and harvest equipment serve as entry ports for various canker and heartrot fungi.

The purportedly innocuous act of protecting the forest from risk carries with it other risks that may outweigh any potential benefits. These effects on habitat availability are not addressed in the plan. They further underscore the need to protect scarce late-successional communities and make provision for regenerating more. If such provisions had been included in the plan, there would be less need for all the risky management practices intended to protect the current supply of late-successional forest.

We do not dispute that the role of fire, wind, insects, and diseases needs to be factored into ecosystem planning for the Pacific Northwest forests. Old-growth habitat must be managed as a dynamic entity, and the reintroduction of fire, including prescribed burning, into these systems should be encouraged. Our point here, however, is that the use of that tool and other "fireproofing" techniques themselves pose significant risks to spotted owls and other species and their habitat. It is irresponsible for the FEMAT to recommend these practices without explicitly addressing their potentially negative impacts.

Questionable Silvicultural Treatments in Reserves

Thinning. Less than half of the late-successional forest reserve system currently is considered to be LS/OG forest (FEMAT, p.IV-54, Table IV-9). The Clinton plan proposes thinning and other silvicultural treatments in the remaining forests in

reserves to accelerate the development of multi-storied old-growth forest characteristics. While there is undoubtedly much that can be done to convert second-growth, even-aged stands to a multi-storied condition, application of the proposed strategy in the reserve system raises serious concerns.

Methods of stand manipulation referred to in the FEMAT report rely on ecological intuition and simulation modelling, not empirical evidence. While these techniques may accelerate development of multi-storied conditions, the final results of proposed manipulations are unknown. The forest simulators used to develop the prescriptions described in the report were constructed originally to predict the timber yield of region-wide average stands, not ecological factors such as coarse woody debris and habitat suitability. The team, however, evinces caution only by prescribing that "silvicultural activities should generally be limited to 5 percent of the total area in any Late-Successional Reserve in the initial 5-year period..." (FEMAT, p.III-35). In contrast, the ISC strategy, upon which the draft plan is based, explicitly states that habitat improvement studies should be experimental and "should be tested outside the HCAs" (Thomas et al. 1990, p.30). We agree with the ISC. We also point out that in portions of the region where LS/OG forests are especially reduced, such as the Coast Range, even a 5 percent deterioration of habitat could have highly significant negative effects.

More importantly, the same concerns regarding increased risk to forest health apply to these silvicultural treatments as to the proposed fire management practices discussed above. Whether for salvage, fuel reduction, or habitat enhancement, logging activity increases fuel loads and severity of fire, risk of escaped fire, insect attack, and disease spread. Additionally, logging generally requires construction of roads and use of heavy equipment, which can alter hydrology, compact soils, increase erosion and fire risk, and allow entry of predators, weeds, and poachers. (See Section IV for additional discussion of road impacts on fish habitat.) Methods carrying such potentially high risks should be perfected outside of critical LS/OG forest reserve areas before being applied to the reserve network.

Salvage. The ISC wisely recommended against salvage in HCAs. The draft recovery plan for the spotted owl repeatedly stressed a concern that no actions be taken that damage the owl; salvage logging was permitted, but only "to maintain or re-establish suitable conditions" for owls (USDI 1992, p.108). The discussion of salvage in the FEMAT report does not provide such direction. Rather, salvage is portrayed as "not detrimental" to habitat conservation. Interagency interdisciplinary review teams would generally have discretion to determine whether proposed salvage logging would be "neutral or beneficial to achievement of the purposes of the Reserve in both the short and long term" (FEMAT, p.II-17). Significantly, the recovery team's recommendation against cutting of trees larger than 20 inches is

not part of the FEMAT report. Without further explanation, the loosening, rather than tightening, of standards suggests that salvage can be expected to be a major source of timber under Option 9.

The FEMAT report acknowledges that certain sectors of the public are distrustful of land management agencies when salvage is contemplated. This is because salvage has been abused to facilitate logging when environmental laws and public opinion would have otherwise prohibited it. Salvage is often portrayed as environmentally benign, since the target is ostensibly dead trees, but this is a gross misrepresentation. Salvage, rather than environmentally benign, is a full-scale logging operation with long-term effects similar to traditional harvest operations. Through the removal of large dead and dying trees and the unavoidable disturbance effects of logging, salvage operations degrade, rather than enhance, late-successional forest ecosystems. Furthermore, the fire risks associated with salvage are greater than with regular green sales, as sites are (or should be) heavily laden with dead, dry, fine fuels. Because salvage logging removes only large, sound stems, it has no beneficial effect on the fuels that contribute to ignition and spread of fires; reduction of fire risk cannot be used to justify salvage logging.

Given the FEMAT's objective of maintaining late-successional species and ecosystems, there is no sound reason to allow salvage sales within reserves. The ISC strategy did not allow for salvage within HCAs (Thomas et al. 1990, p.30), and the DEIS fails to provide a rationale for permitting salvage sales within reserves. The suggestion that salvage cuts in old-growth habitat can benefit (or even be neutral to) spotted owls and other dependent species is unfounded. The objective of salvage logging is to recover money, not habitat. Given the risks of entry and the importance of coarse woody debris in ecosystem structure and function, salvage timber sales should be prohibited within the reserve network.

Inadequate Management Prescriptions in the Matrix

As previously mentioned, none of the alternatives accounts for the dynamic nature of Northwest ecosystems by providing for recruitment of late-successional forest from the matrix. Under all options, matrix lands will be maintained in even-aged forest generally less than 80 years old. Only coarse wood retention requirements provide any elements of old growth structure in the managed landscape. Options 1-7 require the implementation of the 50-11-40 rule, which is believed to be important to spotted owl viability, but its effect on other species is unknown, and its effect on the owl has never been tested. With or without the 50-11-40 rule, matrix lands will be held in early-successional conditions, unable to contribute future old growth to replace that inevitably lost from reserves.

The matrix guidelines of Option 9 for most national forests in the region call for retaining 15 percent of harvest unit volume following logging -- half in patches 1/2 to 4 acres in size. The remaining trees would be scattered across the cutting unit at a density of about 2.5 trees per acre (Johnson et al. 1993, p.21). While riparian reserves and scattered patches may provide "skin grafts" of old-growth habitat for some species, these guidelines will assure the disappearance of late-successional forest interior conditions until regenerated forest has sealed the edges. Retention standards should be written to require large blocks of habitat in the matrix to provide interior conditions and supply a source of future habitat.

Small patches and scattered individual trees are also susceptible to windthrow. The density of residual trees recommended under Option 9 is comparable to a seed tree regeneration cut, which is "the only [silvicultural treatment] not appropriate for old growth Douglas-fir" due to problems with windthrow (Burns 1983). Residual trees likely would not survive the first winter.

About one-third of BLM lands would be subject to industrial timber management, with stands cut on 60- to 120-year rotations and 6 to 8 trees retained per acre. Another 6 percent would be in connectivity/diversity blocks that would be cut on about a 150-year rotation. Even in these areas, there would be no chance for any stand to meet the age-based definition of old growth. One hundred and twenty-acre clearcuts (except for about a dozen trees per acre) will be managed intensively to create structural characteristics of old growth within 120 years. These stands will be logged 30 years later, so only 20 percent of the land in the diversity/connectivity blocks will meet even a structural definition of old growth at any one time.

At first glance, matrix lands in California national forests appear to be somewhat better protected under the plan, but further investigation reveals that the Forest Service would likely give these lands considerably less protection than the plan indicates. According to the DEIS, Option 9 would require matrix lands in California to "achieve 180-year rotations in conifer stands" (DEIS, p.2-42). However, in calculating the amount of timber sale volume anticipated from California matrix lands, the FEMAT's resource analysis group interpreted this management standard in a way that would result in stands being cut when they are much younger than 180 years. Essentially, the analysts included in its land base for computing timber yields all lands in the matrix that the Forest Service has classified as unsuitable for timber production (Johnson et al. 1993, p.16). As a result, the estimated sale level for California is 184 million board feet, or about one-third more than the 124 million board feet that could be produced if only suitable timber lands were included (*ibid.*, p.63, Table 20). If Forest Service managers apply the same interpretation as the FEMAT group, conifer stands

in California might actually be cut on average rotation ages of about 120 years, not the 180 years indicated in the plan.

In addition, the estimated timber sale level for California matrix lands is based on the assumption that the first stands to be logged would be those providing the highest monetary return (Johnson et al. 1993, p.16). The assumed management approach would ensure that the biggest trees and highest quality old-growth forests in the matrix would be liquidated in the next few years. We object to this approach because, while it may squeeze a little more timber out of the woods in the short term, it would quickly foreclose any options for preserving additional high-quality old growth based upon new scientific evidence or other factors. Cutting the matrix on the basis of average monetary returns, together with including only suitable timber lands in the rotation base, would reduce the estimated annual sale quantity for northern California from 184 million board feet to 70 million board feet (*ibid.*, p.63, Table 20).

Flawed Forest Ecosystem Assessment

The adequacy of reserve configurations and management alternatives to protect the forest ecosystem was addressed in two ways. In the first, options were evaluated based on their ability to maintain a functioning ecosystem across the range of the owl. The second method, discussed in Section V of this critique, took a species-by-species approach and assessed the ability of each alternative to maintain viable populations of individual species. The following analysis focuses on the first method, ecosystem viability, but will draw on information described in greater depth in Section V.

To assess ecosystem viability, the late-successional ecosystem panel divided the region into dry and moist provinces and, for each, assessed how well various alternatives provided for (1) abundance and diversity of late-successional communities, (2) ecosystem process and function, and (3) connectivity. "Long-term average conditions" were used as the standard against which to judge, and the alternatives were scored based on their ability to provide these conditions across the region. These three attributes were given equal weight, and an average score was calculated for each alternative for comparison.

In general, Option 9 performed relatively poorly in the "abundance and diversity" and "connectivity" categories and relatively well in "process and function." On the other hand, Option 1, which preserves all remaining old-growth forest and allows no thinning or salvage in reserves, performed poorly in "process and function" and well in the others. Option 1's high scores in "abundance and diversity" and "connectivity" can be explained by its dramatic superiority in protecting individual species (see Section V) and the connectivity provided by high reserve acreages. Option 9's high process score is attributable to the panel's belief that manipulation in reserves and the

retention of coarse wood in the matrix will allow for the reestablishment of natural processes. In the moist provinces, the two ended up tied in overall viability, while Option 9 slightly outranked Option 1 in the dry provinces.

The FEMAT's ecosystem viability assessment has three flaws that, taken together, seriously undermine the validity of the results. First, the team apparently gave too much credit to the ability of thinning and other types of "restoration silviculture" to hasten the development of old-growth characteristics. While cautioning that the effectiveness of these methods should be treated as a "working hypothesis," the team "assumed that without restoration silviculture, late-successional conditions would be retarded in development" (FEMAT, p.IV-72). This was the primary reason that Option 1, which reserves the largest area for late-successional forest but prohibits thinning and salvage in reserves, was rated relatively low by the team (*ibid.*, p.IV-76). As discussed previously in this section, not only are the benefits of such activities unproven, but they pose substantial risks of causing severe fires, accelerating the spread of insects and diseases, and degrading watershed conditions.

Second, the team also gave undue credit to Option 9's "adaptive management areas" (AMAs) in its assessment.⁷ Under Option 9, 10 AMAs totalling 1.5 million acres would be established to encourage development of "innovative management approaches" (DEIS, p.2-41). The goals and proposed management direction of the AMAs are vague and contradictory. For instance, the DEIS assumes on the one hand that all spotted owl sites in AMAs will be protected to the same extent as late-successional forest reserves (DEIS, p.3&4-60), suggesting that relatively little logging of old-growth habitat will occur in these areas. However, the DEIS also assumes that designation of land as AMAs "would not reduce the sale level that would otherwise occur under the alternative" (*ibid.*, p.3&4-106). Except for two AMAs in the Mount Baker-Snoqualmie National Forest, the AMAs would generally be expected to yield the same amount of timber "as if they were part of the suitable timber base with no special additional prescriptions" (Johnson et al. 1993, p.8). Clearly, the Forest Service would like to have its cake and eat it, too, in AMAs.

As with the use of restoration silviculture techniques, we have no objection to applying adaptive management strategies to lands that are in the matrix. But we strongly oppose the

⁷ The FEMAT offered the following rationale for boosting Option 9's viability rating based on AMAs: "We felt that the opportunities to increase knowledge about ecosystem function and management in the adaptive management areas of Option 9 actually increased the likelihood that this option would provide late-successional characteristics in the future, given our poor understanding of ecosystem function and the likelihood of future environmental change" (FEMAT, p.IV-72).

designation of lands as AMAs that should be part of the forest reserve system. Based on GIS analysis of Option 2 (which protects all LS/OG 1 and 2) and Option 9, we estimate that the AMAs include 588,000 acres of ecologically significant old growth (LS/OG 1 and 2). The loss of these ecologically significant forests would certainly decrease the viability of late-successional forest ecosystems.

Third, giving equal weight to the three factors (abundance and diversity, process and function, and connectivity) is inappropriate in an assessment of ecosystem viability. While process and function should guide management, the true test of ecosystem management should be the maintenance of viable populations. Since Option 1 is obviously far superior to Option 9 in this respect (see Section V) and since that superiority is directly related to the amount of old growth protected by the plan (FEMAT, p.I-2), old-growth acreage is clearly a better determinant of ecosystem viability than are process and function. As emphasized above, processes should be the basis of management, not the test of its success. It simply makes no sense to give an alternative high marks for ecosystem viability, when that alternative is demonstrably deficient in maintaining the viability of ecosystem components.

Cursory Treatment of Non-federal Lands

Ecosystem management planning must focus not just on elements within the federal lands; it must consider those lands in the context of the entire landscape. The DEIS and FEMAT report purport to undertake such an analysis, but they fail to go beyond a mere description of the dire condition of the surrounding lands. As discussed in Section V, the failure to take into account the cumulative effects of the habitat conditions and other environmental factors outside of federal lands is a major shortcoming of the DEIS. True ecosystem management must take stock of the relative abundance of elements of biodiversity on federal and non-federal land and adjust management plans to emphasize those elements that can only be provided by federal lands.

The regional landscape, once at least half covered by old-growth forest, is now in a severely fragmented condition with scattered remnants of old growth representing only 10 to 15 percent of the land base. Biological diversity is suffering as a result. Models of vertebrate species response to habitat fragmentation show that species diversity begins to decline when 50 to 75 percent of the landscape is cutover within a period not providing for the return of late-successional forest. With only 10 to 15 percent of the landscape in older forest, this system is already well into the phase of decline.

Agency scientists increasingly are recognizing that biological diversity must be defined according to the model provided by nature. Yet the DEIS and FEMAT report present no

evidence of an attempt to represent that model across the landscape and thus cannot achieve the objective of maintaining biological diversity. The federal government must acknowledge its responsibility to maintain the integrity of the regional ecosystem by restoring biodiversity at the landscape level. The draft plan should be adjusted to increase those landscape elements in shortest supply: older coniferous and hardwood forests, roadless areas, and intact riparian habitat.

Additionally, the plan should outline a strategy for dealing with non-federal lands to secure a landscape that is more amenable to ecosystem management. The FEMAT report, like the spotted owl recovery plan and other previous scientific studies, indicate that certain non-federal lands are likely essential for the viability of the spotted owl and many other species. For example, the current checkerboard ownership pattern of federal and private lands in the Oregon Coast Range and Washington's Interstate 90 corridor currently poses a major obstacle to ecosystem management. Approaches to overcome these problems include aggressive land exchange or acquisition, habitat conservation planning under the Endangered Species Act, and cooperative agreements with state and private land owners.

IV. AQUATIC ECOSYSTEM PROTECTION

Option 9 and all but one of the other alternatives address the objective of protecting salmon habitat primarily through an "aquatic conservation strategy." The following analysis shows that the Clinton plan, while clearly a major improvement over existing forest plans, falls short of providing the level of habitat protection required to assure long-term survival of salmon and other riparian-dependent species on federal lands.

Option 9's Aquatic Conservation Strategy

The FEMAT's strategy for protecting aquatic ecosystems has four major elements.

1. Key Watersheds. The plan would designate a network of 162 key watersheds covering 8.7 million acres of national forest and BLM lands, or about one-third of the federal land within the range of the northern spotted owl. Under Option 9, a relatively high proportion of late-successional forest reserves are located in key watersheds. Road construction would be minimized in key watersheds by prohibiting road construction (but not logging) in roadless areas and by requiring that any new road construction be offset by removal of an equivalent amount of existing roads. Additional protective measures are described below.

2. Riparian Reserves. The plan provides no-cut riparian buffers along all streams, lakes, and wetlands on federal lands in the region. As noted in Section II, the size of riparian reserves varies depending on the type of adjacent stream and, in the case of intermittent streams, whether the stream is located in a key watershed. Outside of "Tier 1" key watersheds, the minimum riparian buffer along intermittent streams would be half as wide as it would be for streams in key watersheds. Riparian area boundaries and management guidelines would be adjusted based on results of watershed analyses. In addition, "unstable and potentially unstable areas" would be designated as riparian reserves. The strategy relies on "watershed analysis" (see below) to identify unstable lands and design adequate buffers.

3. Watershed Analysis is a procedure envisioned for evaluating watershed conditions, revising riparian reserve boundaries and management prescriptions, and identifying restoration priorities. No land management activities would be permitted in a key watershed until a watershed analysis was completed. Watershed analyses are recommended outside key watersheds but, except for roadless areas, are not required.

4. Watershed Restoration. The plan includes a major watershed restoration program focussing on road-related runoff and sediment production, riparian vegetation, and stream habitat complexity. Unneeded, unstable, or poorly located roads would be obliterated,

while roads that remain open would be upgraded to reduce future impacts (FEMAT, Appendix V-J).

Significant New Information Needs to Be Considered

The Wilderness Society recently completed a major, two-year study of the impact of federal land management on wild Pacific salmon.⁸ The study produced a wealth of new information about the status of salmon populations in the Pacific Northwest and California (including the entire area covered by the Clinton plan) and the need for drastic changes in federal land management.

In addition to the information included in the analysis below, our data on the status and geographic distribution of salmon fill a number of important gaps in the FEMAT report. For instance, the FEMAT report contains detailed information about the total amount of habitat of various terrestrial species within the range of the northern spotted owl, the proportion of each species' habitat on federal lands, and the allocation of that habitat to different management categories under Option 9 (FEMAT, Appendix Tables IV-C-1 through 9). However, no such information is provided concerning salmon or any other fish species.

Table 1 shows the freshwater distribution of the 10 major species and races of Pacific salmon on federal and non-federal lands in the northern spotted owl region. It provides some of the information on salmon habitat missing from the FEMAT report. These data demonstrate that the importance of federal lands varies substantially among different salmon species. For instance, summer steelhead and spring and summer chinook find most of their spawning and rearing habitat on federal lands. The sea-run cutthroat, on the other hand, has only about 20 percent of its freshwater habitat on federal lands.

We also analyzed how salmon habitat is allocated among different management categories under Option 9. This analysis indicates that about 3.4 million acres of land within the range of one or more salmon species are located outside of reserves and therefore would be subject to logging or road building.

In addition, we analyzed how much of the non-reserved salmon habitat is located within and outside of key watersheds. We estimate that just 30 percent of the non-reserved salmon habitat is inside key watersheds. The remaining 70 percent, covering some 2.4 million acres of the salmon's range, would be subject to extensive land-use disturbance without the safeguards provided in key watersheds.

⁸ A copy of the 110-page report, titled Pacific Salmon and Federal Lands: A Regional Analysis, will be submitted as part of The Wilderness Society's comments on the DEIS.

TABLE 1. DISTRIBUTION OF SALMON HABITAT
WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL

Salmon Habitat	Ownership (acres)		Total
	Federal Lands	Non-Federal Lands	
Spring/Summer Chinook Salmon	5,207,000	4,060,000	9,267,000
Fall Chinook Salmon	7,892,000	14,346,000	22,238,000
Winter Chinook Salmon	4,000	23,000	27,000
Chum Salmon	1,914,000	7,386,000	9,300,000
Coho Salmon	9,315,000	20,582,000	29,897,000
Pink Salmon	2,855,000	4,311,000	7,166,000
Sea-Run Cutthroat Trout	5,411,000	14,410,000	19,821,000
Sockeye Salmon	299,000	581,000	880,000
Summer Steelhead	4,711,000	3,639,000	8,350,000
Winter Steelhead	11,035,000	23,189,000	34,224,000

Habitat Problems Are Understated

While the FEMAT report discusses the general deleterious effects of logging and road building on stream habitat, it mentions little of the existing information about habitat problems on federal lands. Habitat conditions are so severely degraded in areas subject to logging and other extractive land uses that much stronger protection and restoration measures are clearly needed.

Western Oregon. The Bureau of Land Management has estimated that one-third of the salmon and trout habitat on the 2.5 million acres of forested land it administers in western Oregon is "drastically reduced" in productivity due to the effects of logging and road building (Anderson and Aplet 1992). Fish populations within these streams are only 10 to 25 percent of potential. Another third of BLM streams are "substantially altered," with fish populations about 50 percent below potential productivity. Most of BLM's lands in western Oregon are interspersed with private timber lands, creating a densely roaded and heavily logged forest landscape.

Stream habitat conditions on national forests in western Oregon are also seriously degraded. For example, a Forest Service inventory of streams in the Umpqua National Forest assigned 62 percent of the streams "low" or "very low" habitat ratings (USDA Forest Service 1993). The agency found a close relationship between habitat conditions and history of land management activity: streams with "low" or "very low" habitat ratings were located primarily in moderately to heavily roaded and logged watersheds, while streams rated "good" or "very good" had relatively little or no history of logging and road construction (ibid.).

Western Washington. A Forest Service analysis of watershed conditions in the Mount Baker-Snoqualmie National Forest in the Cascade Mountains of western Washington concluded that 19 of the forest's 78 watersheds were in "unacceptable" condition (USDA Forest Service 1990a). Extensive logging and road building on unstable soils and steep slopes had produced landslides and flooding, resulting in streambank erosion, filling of pools, loss of large woody debris, water quality degradation, and reduction in numbers and diversity of fish species. Loss of pool habitat has been linked with logging activity in other parts of western Washington as well (Bisson and Sedell 1984).

Northern California. Various land-use activities, coupled with major floods in the 1960's and wildfires in the 1980's, have resulted in unhealthy watershed and stream habitat conditions in the Klamath River Basin (Higgins and Kier 1992). Throughout northwestern California, many low-gradient streams that formerly provided optimal salmon spawning and rearing habitat have been damaged by sedimentation that has filled pools and destabilized spawning gravel (Higgins et al. 1992). High water temperatures

and poor water quality, often associated with irrigation, are also prevalent problems in northern California.

Eastern Oregon and Washington. A Forest Service study of national forest ecosystem conditions in eastern Oregon and Washington, including some areas within the range of the northern spotted owl, found that riparian vegetation and associated fish habitats have been adversely affected in many watersheds by livestock grazing, road building, logging, irrigation, and flood control practices (Everett et al. 1993). More recently, a panel of scientists convened by the American Fisheries Society and several other scientific societies recommended stream habitat protection measures for eastside national forests that go well beyond those proposed in the Clinton plan (Eastside Forests Scientific Society Panel 1993).

Unstable Lands Pose Landslide Risk

The FEMAT recognized that the impact of timber management activities on stream conditions and fish habitats depends to a large extent on the sensitivity of the watershed to disturbance. Numerous studies have documented that roads and clearcuts on steep, unstable lands in the region can increase landslide rates, from several fold to more than 100 fold, depending on geologic and climatic conditions (Sidle et al. 1985). Accelerated landsliding is usually an inevitable consequence of logging on such lands (Chamberlain et al. 1991). In reviewing the effects of logging on salmonids, Hicks et al. (1991) drew particular attention to risks associated with increased disturbance of steep, unstable slopes. They warned that "logging impacts will become more severe as timber harvest moves to progressively less stable landforms and as the area of managed forest increases."

We performed a GIS analysis of slope steepness patterns to assess the extent to which the Clinton plan addresses landslide risks on federal lands in the region. As stated in the FEMAT report, "Hillslope steepness is one of the simplest indicators of areas prone to debris slides and flows (rapid mass movements of soil and organic material down hillslopes and stream channels)" (FEMAT, p.V-3).

The slope steepness layer was developed from digital elevation model (DEM) data obtained from the U.S. Geological Survey. The analysis consisted of grouping all lands (both federal and non-federal) within the range of the northern spotted owl into one of three slope steepness categories and combining the slope categories with the Option 9 and roadless area GIS data furnished by the Forest Service.⁹ We also analyzed slope

⁹The Option 9 data layer did not indicate the location of riparian reserves. Based on information in the FEMAT report, we estimate that about 27 percent of the unreserved lands consists of riparian reserves.

steepness within ancient forests in 12 national forests, based on data compiled by The Wilderness Society (Morrison et al. 1991). Lands were grouped into those with slopes greater than 20 degrees (steep), between 10 and 20 degrees (moderately steep), and less than 10 degrees (not steep), based on a conservative slope rating system used by the Forest Service's Pacific Northwest Research Station (F. Swanson, pers. comm.).¹⁰

The results of our analysis make clear that federal and non-federal lands within the range of the northern spotted owl differ markedly in steepness characteristics. As indicated in Figure 1, about 11 percent of all land in the region is located on steep slopes (greater than 20 degrees) and 25 percent is on moderately steep slopes (10 to 20 degrees). Steep slopes are found predominately on federal lands: 71 percent of all lands with slopes greater than 20 degrees is located on federal lands.

Roadless areas tend to be much steeper than other federal lands and therefore pose greater landslide risks if disturbed. Among roadless land not protected under Option 9, 45 percent is located on steep slopes and 35 percent is on moderately steep slopes (Figure 1). Ancient forests appear to be found on slopes that are somewhat steeper than federal lands generally, but not as steep as roadless areas. Approximately 32 percent of ancient forests not protected under Option 9 are on steep slopes, while another 36 percent are on moderately steep slopes (Figure 1). As noted earlier, these figures are based on ancient forest data for 12 of the 17 national forests in the region.

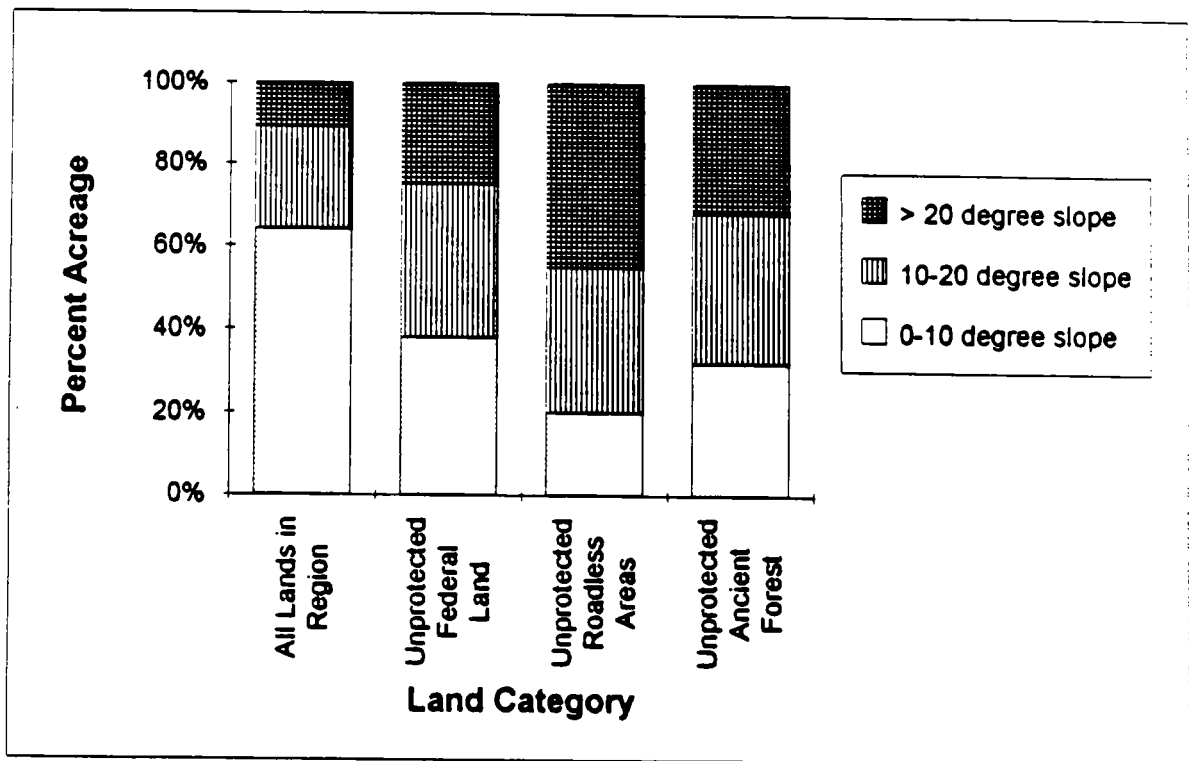
Significantly, our analysis indicates that under Option 9 a total of approximately 1.5 million acres of the land on steep slopes would not be protected from logging and road building. Logging and other land use activities on these steep, unprotected areas could pose significant risks of landslides, erosion, and damage to stream habitat.

No Assurance That Unstable Lands Will Be Protected

The results of the above analysis suggest that Option 9 could pose unacceptable risks of landslides and associated impacts to stream habitats resulting from land-use activities on steep, unstable slopes. Proposed logging and road building in roadless areas and old-growth forests are of particular concern. But many other steep lands also need to be identified and protected in order to avoid continued loss of aquatic habitat quality and biodiversity.

¹⁰ DEM data provide only a general approximation of actual slope steepness. Comparison of DEM-based slope information with topographic maps indicates that DEM data at the scale used in this analysis tend to underestimate actual steepness; some slopes as steep as 32 degrees on topographic maps were shown as 20 degree slopes in DEM (F. Swanson, pers. comm.).

FIGURE 1. SLOPE STEEPNESS ZONES FOR THE REGION* AND UNPROTECTED FEDERAL LANDS UNDER OPTION 9**



* lands within the range of the northern spotted owl in Washington, Oregon, and Northern California

** lands designated as matrix or adaptive management areas

The Clinton Plan provides little assurance that the many thousands of acres of fragile land allocated to timber production will be protected from logging and road building. The Aquatic Conservation Strategy calls for "unstable and potentially unstable areas" to be included in riparian reserves (FEMAT, p.v-36). But there is little reason to think that much of this fragile land will actually be protected.

First, the primary method by which fragile lands supposedly would be identified is through the watershed analysis process. However, watershed analyses are not required outside key watersheds and roadless areas. As discussed above, 70 percent of the unprotected federal land containing salmon habitat is located outside key watersheds. Consequently, the Strategy provides no formal mechanism for locating most unstable lands that pose a risk to salmon.

Second, the land management agencies' past reluctance to remove fragile lands from timber production casts doubt on whether such lands would actually be protected, even if identified as unstable by the watershed analysts. For example, the Forest Service's 1989 management plan for the Siskiyou National Forest in Oregon identified 22 percent of the forest as "high potential erosion hazard," but it designated only 2 percent of the forest as unsuitable for logging based on landslide risk (Anderson and Olson 1991). Nearly half of Oregon's Umpqua National Forest has at least a 50 percent risk of slope failure following road construction, yet just 0.9 percent of the forest was classified as unsuitable. On BLM lands in western Oregon, 26 percent of all lands available for logging in the plans are considered highly fragile because of steepness, instability, or erosiveness (Anderson and Aplet 1992).

The FEMAT requested that the agencies' estimated timber sale levels reflect the prospective withdrawal of unstable lands (Johnson et al. 1993). Apparently, the team realized that significant amounts of unstable land were in the current suitable timber base. But the agencies' reductions in timber sale volume, ranging from 0.5 to 8 percent (*ibid.*, p.46), reflect only a small proportion of the fragile land that should be removed from the timber base.

"Half-SAT" Riparian Reserves Are Inadequate

Degradation of riparian areas through logging and other land-use activity is generally thought to be a major factor in the decline of salmon and many other old-growth species. In March 1993, a team of Forest Service scientists, called the Scientific Analysis Team (SAT), released a report criticizing existing riparian area management and recommending much more protection (Thomas et al. 1993a). The SAT, like the FEMAT, emphasized the importance of intermittent streams to the aquatic ecosystem as sources of water, nutrients, wood, and other vegetation. As explained by the FEMAT, lands adjacent to

intermittent streams are often prone to landslides and other forms of erosion that can damage stream ecosystems and downstream fish habitat.

For all intermittent streams, the SAT recommended riparian buffers extending at least one potential tree height, or 100 feet, from the streambank. This recommendation (Riparian Reserve scenario 1) was incorporated into the FEMAT's Options 1 and 4. However, under Option 9 and several other options, the full-SAT riparian reserves would apply only to intermittent streams inside Tier 1 key watersheds; elsewhere, the intermittent buffer would be half as large as recommended by SAT (Riparian Reserve scenario 2, or "half SAT"). As discussed earlier in this section, our GIS data indicate that only 30 percent of the salmon habitat outside reserves is located in Tier 1 key watersheds. The remaining 70 of unprotected salmon habitat would receive only half-SAT riparian buffers.

The inadequacy of the half-SAT riparian buffer is clearly spelled out in the FEMAT report. A group of geomorphologists, hydrologists, and fish biologists from the Forest Service, BLM, and Environmental Protection Agency estimated the size of riparian reserves "necessary to protect the ecological values of intermittent streams" with different slope and rock types (FEMAT, p.V-38). Their analysis shows that half-SAT riparian reserves are only adequate in areas without steep slopes. As demonstrated previously in this section, most of the unprotected lands under Option 9 are steep or moderately steep. In steep terrain, the required buffer width ranges from 100 to 200 feet, depending on rock stability characteristics (*ibid.*, Figure V-38).

The half-SAT riparian reserve size was a major factor in Option 9's relatively poor species viability ratings for salmon and trout. The FEMAT gave Option 9 only a 65 percent likelihood of maintaining viable, well-distributed populations of salmon, steelhead, and sea-run cutthroat, compared to 80 or 85 percent ratings for Options 1 and 4, both of which provide full-SAT riparian buffers (*ibid.*, p.V-69, Table V-11). The FEMAT report states that one way to improve viability prospects for fish under Option 9 would to "replace the Riparian Reserve 2 scenario [half SAT] with the Riparian 1 scenario [full SAT]" (*ibid.*, p.V-70). The FEMAT panel considered full SAT protection particularly important for the large number of imperiled salmon stocks in coastal streams.

Forest Reserve Management vs. Watershed Restoration

One of the purported advantages of Option 9 for aquatic ecosystems is the placement of late-successional forest reserves in key watersheds. However, the extensive use of thinning and salvage logging proposed in forest reserves would negate many of the benefits of the reserves.

A key element of the Aquatic Conservation Strategy is a watershed restoration program, which would largely consist of closing and decommissioning unnecessary logging roads in order to reduce landslide risks and restore natural drainage patterns. Thinning and salvage in forest reserves would likely require continued or even greater road access within the reserves. Consequently, many roads in reserves that might otherwise be removed would likely stay open and (in the FEMAT's words) remain as "'loaded guns' waiting for the next large storm to fail and damage streams" (FEMAT, Appendix V-J).

Watershed Analysis Is of Dubious Value

Another central element of FEMAT's Aquatic Conservation Strategy is watershed analysis, which would be required before management activities in key watersheds and roadless areas could proceed. The FEMAT report describes watershed analysis as procedures to "evaluate geomorphic and ecologic processes" and as "the basis for monitoring and restoration objectives and the foundation from which Riparian Reserves can be delineated" (FEMAT, p.V-32).

The FEMAT calls watershed analysis "a relatively new concept" in public land management. To the contrary, the Forest Service has been using various types of watershed analysis for the last several years. And while the FEMAT may have something quite different in mind, our experience with the agency's past efforts gives us no reason to believe that watershed analysis will protect aquatic ecosystems.

A serious problem with Forest Service watershed analysis is that it has focused protection and restoration efforts on the most degraded watersheds, while giving a green light to disturbance of watersheds that are still in relatively pristine condition. This problem has repeatedly surfaced in Pacific Northwest forest plans, including the Mount Baker-Snoqualmie and Shasta-Trinity national forests. Indeed, the Forest Service has used the results of cumulative watershed analyses to justify targeting roadless areas for accelerated development in many national forests.

The FEMAT report gives no assurance that watersheds in good condition will be protected through watershed analysis. According to the SAT report, the principal function of such analyses would be "evaluating and making decisions about cumulative watershed effects" (Thomas et al. 1993a, p.455). However, cumulative effects usually are only detectable after substantial logging and road building have occurred. Moreover, the impacts of timber management may not show up for several years, after a major storm triggers landslides and sediment works its way downstream.

Watershed analysis can play an important role in ecosystem management, but probably not in the way in which the Forest

Service and BLM would apply it. Watershed analysis should evaluate ecological values and hydrological/geological conditions on all lands and ownerships within a basin. Such an analysis would identify the highest quality watersheds (i.e. the "key watersheds") and set them aside as reserves or refugia to ensure that existing biodiversity is not compromised. Watersheds that have been significantly degraded, on the other hand, should be analyzed to determine how to prevent further degradation and achieve restoration.

The FEMAT Aquatic Conservation Strategy turns this ecosystem approach on its head. By prescribing intensive analysis of potential land management impacts in key watersheds and roadless areas, the FEMAT implies that significant management activity and associated habitat impacts in these areas are permissible. Analysis and recovery of already-degraded watersheds, which make up the large majority of most basins, would receive little emphasis. Without a more aggressive approach to protect remaining high-quality habitat, there seems little hope of avoiding continued loss of aquatic biodiversity and multiple endangered species listings of fish.

V. SPECIES VIABILITY ASSESSMENT

Assessment Process and Results

The underlying purpose of the FEMAT report and DEIS is to adopt management direction that ensures the viability of species that rely on old-growth forests in the region (DEIS, p.3&4-104). The FEMAT, with the assistance of outside experts, identified about 1,374 species of plants and animals that are closely associated with late-successional and old-growth forests. These old-growth species include 527 fungi, 164 lichens, 106 bryophytes (e.g. mosses), 128 vascular plants, 108 mollusks (e.g. snails), 259 fish, 18 amphibians, 38 birds, 15 mammals, and 11 bats. The FEMAT also catalogued 206 arthropods (e.g. insects), but due to lack of information only 11 groups of arthropods were evaluated.

The FEMAT subjectively evaluated the likelihood of maintaining viable populations of old-growth species for the next 100 years under each management option. Panels of experts were convened to rank the viability of each species or species group, considering only the influence of federal habitat on those species. The team devised a ranking system based on four potential outcomes: A - viable and well-distributed populations, B - viable but with gaps in distribution, C - restricted to refugia, and D - extirpation likely. The expert panels evaluated each option on the basis of whether it attained an 80 percent or greater likelihood of achieving outcome A (viable, well-distributed populations) for the various species. The northern spotted owl and marbled murrelet -- old-growth species listed under the Endangered Species Act -- were evaluated individually.

The results of the viability assessment indicate that hundreds of species would face a heightened risk of extinction under Option 9. Out of 1,079 species evaluated by the FEMAT, 840 species (78 percent) would have less than an 80 percent probability of having viable, well-distributed populations under Option 9. Some species naturally have limited distributions, as demonstrated by the viability rankings for Option 1 -- the alternative that preserves all remaining old-growth habitat. Even under Option 1, 437 species (41 percent) would have less than an 80 percent chance of viable, well-distributed populations. This leaves 403 species (37 percent) that would drop below the 80 percent viability threshold under Option 9 but not under Option 1.

Not surprisingly, the team found that viability likelihoods "were directly related to the amount of late-successional forest in reserve status" (FEMAT, p.I-2). Conversely, "increasing [timber sale levels] by increasing the acres of late-successional forest in the Matrix (and decreasing that in reserve status) ... increases the risk to species associated with late-successional forest habitats" (*ibid.*, p.II-96).

Failure to Assess Cumulative Effects

A critical flaw in the DEIS and FEMAT report is the FEMAT's intentional exclusion of cumulative impacts from the species viability assessments. In its instructions to the scientific panels conducting the assessments, the FEMAT told the panelists to "assume that conditions other than habitat on federal land are adequate to provide for well-distributed, stabilized populations." Conditions to which this assumption was specifically to be applied included habitat conditions on non-federal lands and non-habitat related environmental conditions. (For details, see pages IV-40 to 49 of the FEMAT report and the instructions appended to Frest and Johannes 1993.)

The FEMAT's intent in imposing this assumption on the viability assessments evidently was to focus attention on the habitat impacts of the management alternatives. But the result is a set of species viability ratings that ignore cumulative impacts and will probably cause the EIS to be in violation of the National Environmental Policy Act, which requires consideration of impacts resulting from actions of both federal and non-federal agencies and persons (40 C.F.R. 1508.9 and 1508.25; see National Wildlife Federation v. United States Forest Service, 592 F.Supp. 931 (D. Or. 1984) ("Although the Forest Service cannot control harvesting activities on adjacent non-Forest Service lands, clearcutting on these lands will have an impact on fish habitat, and this other harvesting activity must be considered"))).

Another result of the assumption is that the viability ratings overstate the likelihood that the various options, including Option 9, will maintain well-distributed populations on federal lands. This misleads the public and policy makers into believing that much of the remaining old-growth habitat can be destroyed without seriously risking the loss of species.

Cumulative impacts were considered in the viability rating for just one species, the marbled murrelet. The FEMAT conducted two separate assessments of the murrelet, one based solely on federal habitat and the other estimating population viability "taking into account all the factors that influence murrelets" in addition to federal habitat (FEMAT, p.IV-152). The latter assessment "indicated much greater risk to murrelets than the assessment based only on habitat," with viability ratings dropping from 80-90 percent for most options to 50-75 percent (*ibid.*). The DEIS and FEMAT report do not explain why separate cumulative impact ratings were not conducted for other species.

Ironically, the Forest Service seems to have committed a mistake similar to one that caused Judge Dwyer to declare the agency's previous spotted owl EIS legally inadequate. In that case, the agency based its viability rating for the spotted owl on the faulty assumption that the ISC strategy would also be implemented on BLM lands. This time, the viability ratings for all species are based on the ludicrous assumption that habitat on

non-federal lands will be adequate to support well-distributed populations on federal lands.

Lack of Scientific Documentation for Viability Assessments¹¹

A viability assessment is essentially a prediction of the probability that a population of a particular plant or animal will survive for some specified period of time. All else being equal, the smaller the population, the more likely extinction is in any given time period. Also, the longer the period of time, the more likely extinction is for a population of any given size. Numbers of individuals and numbers of populations are critical variables in conservation planning (how could they not be, when extinction is defined as zero individuals?). Of course, as the ISC noted in their report on the spotted owl (Thomas et al. 1990), numbers must be linked to habitat, lest the whole endeavor become a sterile and meaningless exercise.

There are two approaches to viability assessments. Using data on the life history of the species in question (e.g. birth and death rates, dispersal behavior, etc.), one can model the persistence of populations under different habitat conditions. One can also examine actual data on the persistence times of populations that have been isolated by natural or man-made factors. An example of natural isolation would be birds occurring on islands off the coast of Great Britain, which have been surveyed annually for several decades; an example of man-made isolation would be birds occurring in forest patches left over after urban or agricultural development. Both approaches complement each other and permit planners to set habitat protection goals for the species in question.

Like any scientific endeavor, population viability analysis requires expert judgment. Moreover, competent scientists may disagree as to the level of precision that is now achievable with current knowledge. However, the basis for that judgment should be clearly articulated. If it is not -- if the conclusions are simply presented as arising from expert knowledge -- then "professional judgment" becomes simply "trust us, we're scientists."

Given the vast number of plants, animals, and fungi occurring in the mature and old-growth forests of the Pacific Northwest, it is both impossible and unnecessary to conduct a detailed viability analysis for each species. The FEMAT scientists assembled panels of experts and asked them to rank independently the viability of the various species. The panel leaders averaged the ratings of the individual panel members to obtain an overall rating for each species.

¹¹This portion of the critique was authored by Dr. David Wilcove, senior ecologist for the Environmental Defense Fund in Washington, D.C.

What is missing from the viability analysis is some estimate -- however crude -- of how many martens, fishers, and other species now occur in the federal forests and how many will occur if the different management alternatives and mitigation measures are implemented. Without even a "back-of-the-envelope" calculation of this sort, it is difficult to imagine how the FEMAT scientists came to their conclusions.

Two objections can be made at this point: (1) inadequate data exist to estimate population sizes; and (2) we do not know the relationship between different population sizes and viability. With respect to the first concern, any estimate, especially if it is a conservative one, is preferable to none at all. Density studies should at least permit a crude estimate. With respect to the second objection, there exist enough models and empirical studies to begin to formulate population objectives.

Summarizing these studies, Soule (1987) suggested that a "bottom line" value for a viable population of a vertebrate species would be "in the low thousands," with viability defined as a 95 percent probability of persistence, without loss of fitness, for several centuries. He cautioned, however, that species of concern should be evaluated individually, because his recommendation of a few thousand is "not a rule of thumb. Rather, it is a possible, order of magnitude lower boundary."

C.D. Thomas (1990), reviewing data on species survival rates on islands, arrived at similar values. He recommends minimum conservation targets of 1,000-10,000 individuals for birds and mammals, depending upon the magnitude of the species' natural population fluctuations (more variable populations, such as we see for many rodents, require higher conservation targets). This does not mean that each national forest must contain 1,000-10,000 fishers or martens (clearly an impossibility). But it does mean that each national forest should be part of a population of 1,000-10,000+ individuals whose habitats are secure. Moreover, it is critical to protect multiple populations of all of these sensitive species. Natural barriers such as the Columbia River (as well as unnatural ones created by human activities) can be used to identify separate populations for conservation planning purposes. For invertebrates, C.D. Thomas (1990) recommended that population goals be at least one order of magnitude greater. And, we might add, so should be goals for the number of protected populations.

These studies by Soule and Thomas are highlighted not because they represent the final word on the issue of population viability, but because they provide a scientifically based rationale for assessing viability. The FEMAT scientists may well have employed similar criteria, but if they did, they do not mention them in the report.

Until we have better information on more old-growth species, it is best to proceed cautiously and protect as much suitable habitat as possible. The FEMAT viability analysis is best seen as a warning: many plants, animals, and fungi are closely associated with old-growth forests and their prospects for long-term survival hinge on the protection of that habitat. But to countenance further destruction of old-growth forests based on the viability assessments of the FEMAT is to risk the survival of literally hundreds of poorly known but potentially important species.

Assessment Time Period Is Too Short

The FEMAT assessed the likelihood of species maintaining viable populations over the next 100 years. Their report does not explain the team's rationale for selecting the 100-year time period; it only mentions that "some panelists said the 100-year period was not long enough" and that they "preferred 200 years or longer as an assessment frame" (FEMAT, p.IV-43). Presumably, the team believed that habitat for old-growth species will probably not worsen after 100 years because the remaining unprotected old growth will have already been cut and second-growth forests in reserved areas will have matured to the point that they will be providing some replacement habitat for those species.

However, it is quite likely that habitats and populations of old-growth species will not be stabilizing or recovering within 100 years. For instance, many fisheries biologists believe that the full effect of removing sources of large woody debris may not be felt for many decades after riparian logging, due to gradual deterioration of large woody debris already in the stream channels. The FEMAT report acknowledges that "degraded aquatic ecosystems will not be fully functional in 100 years" (FEMAT, p.V-68).

Moreover, it may take at least 200 years for slow-growing conifers such as western redcedar to provide replacement sources of large woody debris. According to the FEMAT, "100 years is not long enough for the cutover landscapes to return to late-successional conditions that approximate prelogging conditions. Many late-successional attributes require 200 to 500 years to develop" (*ibid.* p.IV-71). Since it will likely take at least two centuries for high-quality old-growth habitat conditions to develop in most national forest reserves, it is unreasonable to use a time frame shorter than 200 years for assessing viability of species that rely on those habitat conditions.

Option 9 Violates NFMA Viability Rule

Even if one were to ignore the serious flaws in the FEMAT's species viability assessments discussed above, it is clear that Option 9 does not comply with the assurance of species viability required by law. The National Forest Management Act (NFMA) requires the Forest Service to provide for diversity of plant and

animal communities on the national forests. Federal regulations implementing the NFMA specify that "fish and wildlife habitat shall be managed to maintain viable populations" of vertebrate species in each national forest (36 C.F.R. 219.19). Forest Service policy directs the agency to maintain viable populations of all existing native plant, fish and wildlife species (Forest Service Manual 2670.12). A viable population is defined as "one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area" (36 C.F.R. 219.19).

The FEMAT evaluated the 10 options primarily on the basis of whether they provided an 80 percent likelihood of maintaining viable populations well distributed across federal lands.¹² As discussed earlier in this section, over 400 species did not meet this standard under Option 9 but did under Option 1 (the option preserving all old-growth habitat). Species not meeting the 80 percent likelihood standard included salmon, fishers, and other vertebrate species, as well as a host of other animal and plant species.

The FEMAT was careful to say it was "not suggesting that only options attaining [80 percent] likelihood satisfy the viability requirement" of the NFMA and that "a score of less than 80 percent should not automatically be regarded as a failing grade" (FEMAT, p.II-28). To the contrary, we believe that the 80 percent likelihood standard is insufficient to meet the NFMA's viability requirement. The regulations require the Forest Service to "insure" the continued existence of species. This means the agency must build into its plans a realistic safety factor to account for fires, wind storms, and other hazards that could threaten a species' viability (Wilkinson and Anderson 1987). Draft amendments to the NFMA regulations proposed by the Forest Service in 1991 specifically define a "viable population" as one that "provides a high likelihood of continued existence" (56 Fed. Reg. 6530, emphasis added). Likewise, the Interagency Scientific Team's spotted owl conservation strategy was designed to achieve a "high" probability of viability (Thomas et al. 1990, p.4), and the Record of Decision for the Forest Service's EIS on spotted owl management states, "For purposes of 36 CFR 219.19, a 'high' probability of persistence insures viability" (USDA Forest Service 1992, p.4, emphasis added). Soule (1987) has argued that viability should be defined as a 95 percent probability of persistence; anything less would expose species to an unacceptable level of risk.

¹² At one point in the report, the team used 60 percent likelihood of species viability in displaying land allocation tradeoffs (FEMAT, p.II-94, Figure II-35).

VI. CONCLUSION AND RECOMMENDATIONS

The FEMAT has contributed significantly to society's understanding of the species that rely on old-growth forests, the severity of the threats to those species, and some of the steps needed to ensure species viability. The team's work represents a major scientific advancement in the debate over old-growth forests. However, important flaws in the team's assumptions and analysis have resulted in a conservation strategy that is deficient in several fundamental respects.

The Clinton Administration should revise the DEIS and its preferred alternative based on these comments and on the following recommendations:

- * Expand the old-growth reserve system substantially to protect all remaining stands of ecologically significant old-growth forest.
- * Allow no thinning, salvage, road development, or other logging activity in reserves.
- * Forests that are outside the reserve system and are otherwise suitable for timber management should be managed on at least 200-year rotations. Experimental thinning, salvage, and adaptive management should only be conducted in areas outside reserves.
- * Eliminate the adaptive management area category from the plan and add all ecologically significant old growth in those areas to the forest reserve system.
- * Include recommendations for the management of non-federal lands as necessary to ensure forest ecosystem integrity and species viability.
- * Treat key watersheds and roadless areas as reserves to be managed for conservation of aquatic biodiversity by removing them from the suitable timber base, prohibiting new road construction, and decommissioning most existing roads.
- * Remove all forest land on steep and moderately steep slopes from the suitable timber base until specific sites are certified as having low landslide risk.
- * Apply Riparian Reserve Scenario 1 (full SAT) permanently to all streams, including intermittent streams outside key watersheds.
- * Include in the viability assessment ratings the cumulative impacts of both federal and non-federal actions on species

viability, taking into account the true condition of habitat on federal lands.

- * Viability assessments based on professional judgment should be accompanied by at least crude population estimates for species that have low population densities and large ranges or small total population sizes.

- * The objective of the management plan should be to provide at least an 95 percent likelihood that all old-growth species will remain viable and well distributed for at least the next 200 years.

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BEFORE THE SECRETARIES

DEPARTMENTS OF AGRICULTURE AND INTERIOR

IN RE DRAFT SUPPLEMENTAL	)	
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LATE-SUCCESSIONAL AND OLD-	)	
GROWTH FOREST RELATED	)	
SPECIES WITHIN THE RANGE OF	)	
THE NORTHERN SPOTTED OWL	)	

INTRODUCTION

These comments on the Draft Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl ("DSEIS") are made on behalf of Seattle Audubon Society, Washington Environmental Council, Pilchuck Audubon Society, National Audubon Society, Portland Audubon Society, Lane County Audubon Society, Oregon Natural Resources Council, The Wilderness Society, Headwaters, Klamath Forest Alliance, Forest Conservation Council, and Northcoast Environmental Center (collectively "SAS").^{1/} As explained below, the DSEIS does not meet the fundamental requirements of the National Environmental Policy Act (NEPA), in at least the following material ways:

^{1/} These organizations may be submitting additional comments under separate cover.

COMMENTS ON DSEIS BY SAS, ET AL.

ATTACHMENTS- 2

(1) The DSEIS once again sweeps substantial scientific disputes under the rug by trying to hide differences of opinion on the viability panels and relying on the opinions of individuals who are not qualified to express opinions on viability;

(2) The DSEIS provides no rational reason for omitting a quantitative assessment of the owl's population viability;

(3) The DSEIS fails to assess adequately the cumulative effects of implementing the options on the population viability of late-successional associated species by ignoring actions on non-federal lands;

(4) The DSEIS fails to disclose the results of the April viability panel; and

(5) the DSEIS fails to identify the results of each viability panelist.

In addition, the preferred alternative, Option 9, violates the National Forest Management Act (NFMA) in at least the following ways:

(1) it fails to provide sufficient late-successional and riparian habitat to insure the continued existence of all species on national forest lands within the spotted owl's range; and

(2) it fails to identify multiple-use prescriptions and associated standards and guidelines for Adaptive Management Areas.

In short, the DSEIS does not reflect any serious attempt by the

Forest Service to comply with the National Environmental Policy Act's ("NEPA") requirements and goals. Nor does the preferred alternative, Option 9, assure species viability, as required by NFMA.

SAS has previously explained the agency's legal duties under NEPA and NFMA. See Comments on DEIS by SAS, et al., dated December 24, 1992; SAS summary judgment and reply memorandum filed in Seattle Audubon Society v. Lyons, Civ. No. C92-479WD (SAS incorporates by reference these discussions of the law). The courts too have had several opportunities to teach the Forest Service NEPA's and NFMA's basic principles. See Seattle Audubon Society v. Evans, 771 F.Supp. 1081 (W.D.Wash.), affirmed, 952 F.2d 297 (9th Cir. 1991); Seattle Audubon Society v. Moseley, 798 F.Supp. 1473 (W.D.Wash. 1992), affirmed, 998 F.2d 699 (9th Cir. 1993) ("Moseley"). The Forest Service, however, does not appear to have taken these lessons to heart. The DSEIS repeats essentially the same procedural errors and Option 9 has essentially the same substantive deficiencies as the agency's previous insufficient efforts.

I. THE DSEIS DOES NOT MEET THE FUNDAMENTAL REQUIREMENTS OF THE NATIONAL ENVIRONMENTAL POLICY ACT

A. The DSEIS Once Again Sweeps Substantial Scientific Dispute Under The Rug.

An EIS must disclose to the public the existence of scientific debate surrounding the agency's prediction of environmental effects. See e.g., Friends of the Earth v. Hall, 693 F. Supp. 904, 934 (W.D.Wash. 1988); Moseley, 798 F. Supp. at

1482; Portland Audubon Soc. v. Lujan, 795 F. Supp. 1489, 1502 (D.Or. 1992), affirmed, 998 F.2d 705 (9th Cir. 1993). The DSEIS fundamentally fails to do so. In fact, the DSEIS hides substantial scientific disagreements within the viability assessment panels themselves.

The DSEIS reports that a panel concluded that Option 9 provided an 83% likelihood of habitat sufficient to support a viable, well-distributed spotted owl population in 100 years. What the DSEIS fails entirely to mention is that only one panelist endorsed the 83% figure. Two of the panelists gave Option 9 approximately a 70% score, while the other panelist scored Option 9 (and virtually all other options) at 100%.^{2/} These results, on their face, exemplify a substantial scientific disagreement about the consequences to the spotted owl of proceeding with Option 9. However, it is a disagreement the DSEIS completely hides from the decision-makers and public.^{3/}

The DSEIS fails to reveal the underlying bases for the

2/ These panelists' results are reported in the administrative record documents; however, the names of the panelists are not included in the record. Only by interviewing panel members can each individual's ratings be established. There is no legal basis for FEMAT's refusal to identify the views of each panelist. See infra at 12-14.

3/ The June murrelet panel had similar scientific disputes. One of the three panelists consistently gave the options high scores, while the other two panelists were much less sanguine about the murrelet's prospects under each option. The dispute between these scientists was sometimes heated and, fundamentally, went to their differing perspectives about the real risks facing the murrelet. These differences are entirely ignored, in fact, hidden in the averages reported by the FEMAT and DSEIS. Nor do the narrative discussions expose these scientific disputes, their nature, or the manner in which they were resolved.

substantial dispute within the spotted owl panel. Thus the public has no idea from reading the DSEIS why some panelists think Option 9 poses a significant risk to the owl's viability, while one believes that the owl's future viability is certain. The DSEIS simply fails to give a "reasoned analysis and response" to this scientific dispute. Moseley, 798 F. Supp. at 1483.

To make a bad situation worse, the two panelists who gave Option 9 the higher scores are not even qualified to assess population viability. Under oath, one of these scientists, Dr. Eric Forsman, testified as follows:

- Q. Dr. Forsman, you are not an expert in the study of species extinction or population viability assessment, are you?
- A. No, I would say I am not. I do have experience in collecting data that go into viability analyses and am responsible for a considerable amount of that.
- Q. The collection of the empirical data that is being interpreted?
- A. That's correct.

Seattle Audubon Society v. Evans, Civ. No. C89-160WD (W.D.Wash. 1991), Transcript of Trial at 837 (emphasis added).^{4/}

Similarly, Dr. Irwin testified under oath:

- Q. But you don't view yourself as qualified to pass an opinion on the possible extinction of the species?
- A. I'm not a population modeler, no. I can read and understand that materials, but I know I'm not so conversant in it that I can make statements about -- about the structures of the mathematical models and

^{4/} Dr. Forsman is well-qualified to collect natural history data on the spotted owl. However, he is not, by his own admission, qualified to analyze that data to determine the owl's population viability.

what they might do to estimates of extinction risk.

Q. And in your opinion, Dr. Irwin, is familiarity with those kinds of models necessary to make judgments about risks of extinction to a species?

A. I would say so.

Seattle Audubon Society v. Robertson, Civ. No. C89-160WD

(W.D.Wash. 1989), Deposition of Larry Irwin at 11.5/

In sum, the DSEIS misleads the public and decision-makers both by obscuring the presence of a substantial disagreement between the panelists and by relying on the opinions of panelists

5/ Dr. Irwin later confirmed these limitations in his expertise:

Q. Dr. Irwin, do you have an opinion about how much owl habitat can be logged without jeopardizing the owl's viability?

A. I really can't answer that.

Q. That is, you don't have an opinion?

A. Right. I don't have any basis for forming that opinion.

Q. It is outside your area of expertise?

A. In part. I don't know what a million acres looks like. I can operate in a square mile on an individual owl basis maybe, but at the level of the entire population from Northwestern California to British Columbia, it would be very difficult for me with my training to make that statement.

Q. What kind of training would you need in order to answer that question?

A. I think again the population modelers are probably the best equipped to at least generate the sorts of mathematical processes that might allow an analysis of that.

Id. at 33-34. See also Defendant Intervenor Croman Corp.'s Answers to Plaintiff's First Set of Interrogatories in Headwaters v. BLM, Civ. No. 89-6016 (Q. "Are you [Dr. Irwin] qualified to express an opinion on the risk of extinction facing the owl?" A. No. I am not a population analyst or population modeler.").

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who, by their own admission, are not qualified to provide an expert opinion about the spotted owl's population viability. The only panelist qualified to offer such an opinion, Alan Franklin, gave Option 9 its lowest ranking.

B. The Forest Service's Reasons For Not Conducting A Quantitative Viability Analysis Are Irrational, Arbitrary And Capricious.

The FEMAT report acknowledges that a quantitative risk assessment "would help to determine whether the options presented here would ultimately be successful." FEMAT at IV-184.

Notwithstanding the obvious utility of quantitative analysis of spotted owl viability, and notwithstanding the Forest Service's investment of hundreds of thousands of dollars in developing the Noon/McKelvey model for the purpose of performing such an analysis, and notwithstanding BLM's use of the Noon/McKelvey model in its planning process, the Forest Service continues to shun any quantitative assessment of spotted owl population data.

As the court explained in SAS v. Moseley,

if the Forest Service decides not to make a further statistical viability study, the EIS should answer the criticisms by explaining why it was not necessary or feasible to make one.

798 F.Supp. at 1493.

The authors of the SAT report, prepared in response to the questions posed by the court in SAS v. Moseley, "agree that the use of quantitative, spatially explicit models to examine

alternatives is a good idea." SAT at 187.^{6/} The SAT offers the following reasons for why the Forest Service had not done so at that time:

1. the only available model "was still in development and not fully tested;" and,
2. the model requires GIS maps of present and projected forest conditions, which are not available.

Id.

Since publication of the SAT these hurdles have been overcome. Forest Service researchers have completed work on the Noon/McKelvey model. The model has been available upon request to anyone who wishes to use it for at least the last year. Thus, the SAT's first condition has been satisfied. As to the availability of GIS maps, the FEMAT report demonstrates that these databases are now available. The FEMAT report is predicated on a region-wide GIS database that includes current and projected future vegetation types, including suitable spotted owl habitat.^{7/} Thus the two prerequisites the SAT report identified have been met; nothing stands in the way of a quantitative analysis of the spotted owl's viability.

6/ SAT emphasizes that "the use of spatially explicit models will, when adequate data is available, undoubtedly provide additional insights into biological processes and will allow the Forest Service to better identify areas that are particularly at risk." SAT at 188.

7/ See FEMAT at IV-165 for statistics on suitable owl habitat under each option. These statistics are based on map-based GIS data suitable for use in the Noon/McKelvey model. Future projections of vegetation type are discussed at IV-55.

What a surprise to discover that FEMAT, which had the necessary tools and data identified by SAT, did not do the quantitative analysis that SAT promised would be so useful. Yet, every member of SAT was also a member of FEMAT. In fact, the leadership of SAT and FEMAT are identical.^{8/} Now, these same individuals, who in SAT said that a quantitative analysis "is a good idea" and awaits only the completion of the model and GIS data, claim "it is unlikely that a truly compelling assessment could be produced any time in the near future, if ever." FEMAT at IV-184. What is now lacking, according to FEMAT is "complete knowledge about owl responses to a full spectrum of habitat and landscape conditions . . . [and] . . . full knowledge of owl population responses to dynamic landscapes." Id. This "complete knowledge" is "years or decades away." Id.

These alleged impediments, if valid now (which they are not), would have been just as valid when SAT was written. Why then did SAT not raise these concerns? The answer is transparent; FEMAT's response is a fabrication. The Forest Service needed a new excuse to avoid doing a rational quantitative analysis of the spotted owl population since the old reasons no longer held water. However, this new excuse is at odds with the authors' previous statements. The Forest Service must, at a bare minimum, provide a rational explanation for why it has changed its mind. SAS v. Moseley, 798 F. Supp. at 1493.

8/ Thus, Drs. Jack Ward Thomas and Martin Raphael were leader and deputy leader, respectively, of both SAT and FEMAT.

C. The DSEIS Fails To Assess The Cumulative Effects Of Implementing The Options On The Population Viability Of Late-Successional Associated Species.

NEPA requires the Forest Service to disclose in an EIS the significant environmental consequences of its land management plans. These effects include, among others, the consequences to species viability. Seattle Audubon Society v. Moseley, 798 F. Supp. 1484, 1490 (W.D.Wash. 1992). The agency's consideration of environmental impacts is not limited to direct effects; it must also consider the cumulative impacts of non-federal actors. 42 C.F.R. § 1508.7 (definition of cumulative impact); National Wildlife Federation v. U.S. Forest Service, 592 F. Supp. 931 (D.Or. 1984) (Forest Service required to consider cumulative impact on streams of public and private logging); Alpine Lakes Protection Society v. Forest Service, No. C93-600R, Order on Summary Judgment (W.D.Wash. Oct. 18, 1993) (copy attached) (NEPA requires consideration of cumulative impacts of private actions).

In stark contrast to what NEPA requires, the Forest Service's numerical scores for species viability assume that species viability is affected only by the actions of federal land managers. FEMAT at IV-45. Thus these numerical results paint an overly optimistic picture of species viability. FEMAT at IV-47 (Consideration of non-federal factors generally "would cause negative effects on populations"). Most importantly, by excluding cumulative impacts from the analysis the decision-maker cannot determine whether there is an alternative that would, when all impacts to the species are considered, protect species

viability.^{9/}

This is best illustrated by the mollusk panel results. The mollusk panel was unique in disregarding the FEMAT's directive to ignore cumulative impacts on mollusk viability. FEMAT at IV-135 (Mollusk panel "had difficulty separating the influence of state and private habitat management from federal management in their judgments"). Thus the panel's viability scores are a more comprehensive picture of the fate of mollusks under each option. Only Option 1 avoids extirpation risks for all mollusk species rated. The other options all risk extirpation of at least several mollusk species.^{10/}

The mollusk panel's critical lesson is that the relative importance of the remaining late-successional forests to species viability depends upon the scope of the analysis. By restricting viability analysis to public lands, as all save the mollusk panel did, the viability results do not disclose the real consequences to species viability from actually implementing each option in

9/ The DSEIS acknowledges that there will be "cumulative environmental impact from nonfederal lands," but inexplicably does not reveal what that impact will be. See DSEIS at 3&4-3. All the reader knows is that non-federal logging will occur under all alternatives, but there is no evaluation of the combined effects of the federal and non-federal logging.

10/ Similarly, the marbled murrelet ratings would have been markedly different had the murrelet panel considered the non-federal cumulative impacts to the murrelet's viability. Thus, the April viability panel, which did consider cumulative impacts, rated each option as "low" for murrelet viability in the short-term, while only Option 1 gained a "medium" rating for the long-term. The June viability panel, constrained by its instructions to disregard cumulative impacts, assigned substantially more optimistic ratings to the options.

the real world. In sum, the Forest Service's blinders-on approach ignores the critically important refugia role that public forests play in the Northwest landscape.

D. The DSEIS Must Disclose The Results Of The April Viability Panels.

An EIS should permit comparison among alternatives and provide a clear basis for choice among options. See 40 C.F.R. § 1502.14. This may require comparison with the agency's prior plans or analyses. For example, prior assessments of species viability have been performed by the "Gang of Four" and the SAT. The FEMAT summarizes the results of these assessments in tabular form. See FEMAT at III-2. Each of these prior analyses used a "low-to-high" descriptive rating scale. FEMAT, however, chose to use a 0-100 numerical scale that makes comparisons between FEMAT's results and previous viability analyses difficult (but not impossible, see infra at 14-16). In fact, FEMAT also performed a viability assessment using the standard low-to-high rating scale, the so-called "April panels," but never reported the results.

The results of the April panels should be discussed in the final SEIS, together with the later June panels' results using the new 0-100 viability scale. This will ensure that the decision-makers and public can compare alternatives fully, including alternatives considered by Congress and in the Forest Service's previous planning efforts.

E. The DSEIS Must Disclose How Each Of The Viability Panelists Rated The Options.

The FEMAT report explains that each of the viability panelists performed an independent analysis of the viability prospects for species under the evaluated options. FEMAT at IV-42 ("The actual rating of likelihoods was individual . . ."). However, neither the DSEIS nor the administrative record identifies the results of each panelist's analysis. The names of the panelist have been redacted from the panel worksheets.^{11/} Thus, for example, the public and decision-maker are denied the opportunity of determining whether a panelist's rating might have been influenced by that panelist's qualifications or bias, such as employment.^{12/}

11/ Further, although the FEMAT report purports to list the panel members, see FEMAT at App. IV-B, these lists mislead by identifying individuals who, in fact, played no role in establishing the panel results reported in FEMAT. Thus, for example, Tom Hamer, David Manuwal, and S. Kim Nelson were the panelists who derived the viability scores for the marbled murrelet reported in FEMAT. However, the FEMAT report claims that six additional persons participated in determining the viability ratings. They did not. Their views are not included in the DEIS's average ratings. Thus the ratings are the result of a small 3-person panel, not of an 8-person panel, as FEMAT implies. Obviously, results from a narrower, smaller panel are likely less robust and reliable than from an equally qualified larger panel.

The FEMAT report makes the same misleading claim about the spotted owl panel's composition. FEMAT asserts that the owl panel consisted of 8 individuals; however, only 4 of these persons actually participated in establishing the ratings reported in FEMAT.

12/ This is of no small consequence. Although FEMAT claims to have selected panelists "who could set interest group values aside," one of the spotted owl panelists (Larry Irwin) is employed by a timber industry association. Perhaps not coincidentally, this panelist is the source of among the most

NEPA requires that the EIS

list the names, together with their qualifications (expertise, experience, professional disciplines), of the persons who were primarily responsible for preparing the environmental impact statement or significant background papers, including basic components of the statement . . . Where possible the persons who were responsible for a particular analysis, including analyses in background papers, shall be identified.

40 C.F.R. § 1502.17 (CEQ regulations implementing NEPA) (emphases added). Since each panelist performed his/her viability ratings independently, each such assessment is a "particular analysis" relied upon to prepare the EIS. Thus, under NEPA, the Forest Service must disclose how each viability panelist rated the options.

In an analogous situation, the courts have also held that the "name of the author is a relevant necessary part of that [author's] opinion." Tennessean Newspapers, Inc. v. FHA, 464 F.2d 657, 660 (6th Cir. 1972). In this case involving plaintiff's effort to discover the name of an appraiser who had performed an analysis of housing value, the court determined that

The very name of an appraiser could be sufficient to establish a motivation sufficient to trigger an investigation. And, in any event, an old adage gained modern vitality when President Truman remarked, "If you can't stand the heat, stay out of kitchen." [cite omitted].

464 F.2d at 660. If the viability panelists were unwilling to take the heat for their individual assessments, then they should not have involved themselves in the process. Insofar as their

generous viability ratings for the spotted owl. However, it is only by personal communication with panelists that a reviewer can determine this coincidence; the DSEIS and administrative record hide the individual panelists' ratings.

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views form the fundamental basis for the government's decision on how 24 million acres of public land is to be managed, the public is entitled to know the views of each of them.

II. OPTION 9 VIOLATES THE NATIONAL FOREST MANAGEMENT ACT

A. Option 9 Fails To Provide Sufficient Late-Successional And Riparian Habitat To Insure The Continued Existence Of All Species On National Forest Lands Within The Spotted Owl's Range.

The NFMA regulations require the Forest Service to provide sufficient habitat to insure the continued existence of wildlife species on national forest lands. As the Service has previously explained, the NFMA regulations require that plans provide at least a "medium high" probability of maintaining a viable population of each species:

Species with medium risk of extirpation are those that were generally ranked by the panelists as less than "medium high" viability (Table S-2) over an approximately 50-year period under at least one alternative. We felt that such a risk category failed to meet the population viability criteria presented in the regulations implementing the National Forest Management Act.

See SAT Report at 264, attached to Defs. Int. Inj. Compl. Rpt. (filed March 19, 1993).

Comparing the SAT viability ratings with FEMAT's numerical scores shows that a FEMAT score of less than 80 corresponds to less than "medium high" viability. Thus, SAT Alternative B is virtually identical to FEMAT Option 7. The SAT judged several amphibians and mammals to rank lower than "medium high" for Alternative B. The corresponding Option 7 FEMAT scores for the

same species are all less than 80 for outcome A.^{13/} A similar exercise comparing the results of FEMAT's April viability panel, which used the SAT ranking method, with the June viability panel scores, which used the FEMAT ranking method, confirms that FEMAT scores of less than 80 for outcome A do not meet the NFMA's viability threshold, as put forth by the Forest Service in the SAT report.

Option 9 fails to provide the minimum level of protection required by the NFMA for many vertebrate species, and even more invertebrates. Admittedly, in the case of several of these species, it appears that the risks to their viability are not related to federal forest management. For example, the Columbia torrent salamander's viability is threatened regardless of how federal forests are managed.

However, the viability of about two dozen vertebrate (and numerous invertebrate) species threatened by Option 9 is directly related to federal forest management. FEMAT reports that these species would be adequately protected under Option 1.^{14/} Based on the FEMAT panel results, for their survival these species

^{13/} The FEMAT Option 7 scores for these species range from 0 to 71 for the species evaluated in both exercises.

^{14/} These species include the black salamander, Cascade torrent salamander, Cope's giant salamander, southern torrent salamander, tailed frog, Larch Mountain salamander, Oregon slender salamander, black-backed woodpecker, fisher, marten, both species of red tree vole, fringed myotis, hoary bat, Keen's myotis, long-eared myotis, long-legged myotis, pallid bat, silver-haired bat, coho salmon, fall chinook salmon, spring chinook salmon, winter steelhead trout, sea-run cutthroat trout, and resident rainbow/cutthroat trout. These species all score less than 80 for Option 9, but greater than 80 for Option 1.

obviously require the remaining late-successional forests be left standing. These results should come as little surprise. It is intuitively obvious that, as logging continues, at some point too little late-successional forest remains to support the viability of some late-successional forest dependent species. The FEMAT's results demonstrate convincingly that too much late-successional forest has already been lost for some species; no slack remains in the system.^{15/} It is unconscionable (as well as arbitrary and capricious) for the government to ignore these scientific findings of its own experts.

B. Option 9 Fails To Identify Multiple-Use Prescriptions And Associated Standards And Guidelines For The Proposed Adaptive Management Areas.

NFMA fundamentally requires that forest plans explain how land is to be managed. Insofar as Option 9 is an amendment to 17 national forest plans, it too must define the management regime for the affected acres. In particular, Option 9 must contain:

Multiple-use prescriptions and associated standards and guidelines for each management area including proposed and probable management practices such as the planned timber sale program.

36 C.F.R. § 219.11(c). Option 9 fails entirely to satisfy this obligation for the lands allocated to Adaptive Management Areas (AMAs).

Although facially inadequate (see § II.A., supra), LSOG

^{15/} The problem also is demonstrated by viability ratings that show lower viability for lower order vertebrates and invertebrates and higher viability for animals at the top of the system. If true, this suggests that problems of distribution for many species will be acute if all late-successional forests are not protected.

reserves, riparian reserves, the matrix, and administrative withdrawals do have prescriptions and associated standards and guidelines. See e.g., Appendix B-39. These provisions establish limits on the management activities that can occur within each allocation.

AMAs, by contrast, are best characterized as "further planning" areas. The DSEIS acknowledges that Option 9 does not provide "specific standards and guidelines" for the management of AMAs. See Appendix B-57. However attractive maintaining unlimited flexibility might be to the Forest Service, the NFMA regulations require forest plans set forth the specific requirements for managing each management area. Option 9 fails to do so for AMAs and, thus, violates NFMA.

This oversight might be excusable if the government agreed that land-disturbing management actions would not occur within AMAs pending the completion of the promised AMA management plans. However, Option 9 requires this of only the I-90 corridor AMA. Logging and road building would be permitted within the other AMAs without the required standards and guidelines.

In sum, the Forest Service forgets that NFMA is a remedial statute intended to limit the Service's discretion in order to correct the agency's past abuses. AMAs, unaccompanied by specific standards and guidelines, are an unlawful extension of the agency's discretion that result in keeping citizens in the dark regarding how their national forest lands are to be managed.

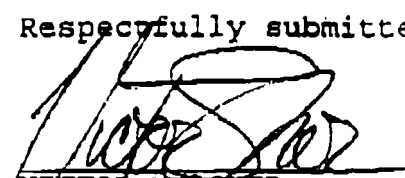
CONCLUSION

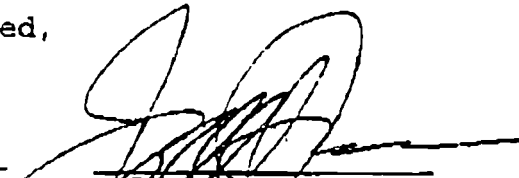
In sum, the Forest Service has not yet faced squarely the environmental consequences of its proposed actions. Instead, it has once again attempted to sweep controversy -- even internal controversy -- under the rug, avoid its critics, and ignore the cumulative effects of its plan. Not surprisingly, as a consequence, the agency has proposed a plan that will fail to protect the viability of species as the law requires.

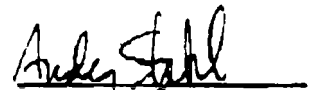
We urge the agency to address directly and seriously the problems identified in these comments and make the changes necessary to adopt a final plan that will comply with the law.

DATED this 26th day of October, 1993.

Respectfully submitted,


VICTOR M. SHER
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Resource Analyst

456SEIS.CMT



Society of American Foresters

Professionals advancing forest science, technology, practice, and a conservation ethic to benefit society.

WS
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PRESIDENT

Jane A. Difley

Vice President
Forestry Programs
American Forest Foundation
Washington, DC

October 28, 1993

VICE PRESIDENT

John W. Moser, Jr.

Professor of Forest Biometry
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The Honorable William J. Clinton
President of the United States
1600 Pennsylvania Avenue
Washington, DC 20500

EXECUTIVE VICE PRESIDENT

William H. Banzhaf

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Dear Mr. President:

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The Society of American Foresters (SAF) represents the forestry profession in the United States and has an interest in the development of an enduring solution to resource management issues on our national forests. Decisions regarding policy and management of federal forest lands in the Pacific Northwest are recognized by SAF as issues of national importance.

I represented the SAF at your Forest Conference April 2, 1993, in Portland, Oregon, and wrote to you about SAF's desires to continue to play a part in the search for proper resolution of national forest management issues in the Pacific Northwest.

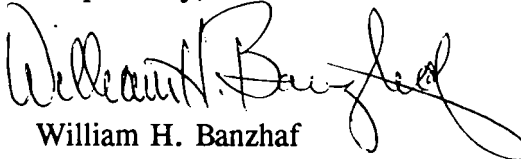
The Society of American Foresters pledged to put its members' talents to use in this process, and in keeping with that pledge, we respectfully submit the following comments from our SAF regional affiliates in Northern California, Oregon, and Washington, on the *Draft Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-growth Forest Related Species Within the Range of the Northern Spotted Owl*, and related documents.

The enclosed comments constitute the position of our three state affiliates on the documents prepared as a result of your Forest Conference. They are based upon study and analysis by professional foresters in the region who bring their special regional knowledge

The Honorable William J. Clinton
October 28, 1993
Page 2

and experiences to bear on issues surrounding the development and implementation of a forest plan for a sustainable economy and environment for the Pacific Northwest.

Respectfully,

A handwritten signature in black ink, appearing to read "William H. Banzhaf", written in a cursive style.

William H. Banzhaf
Executive Vice President
Society of American Foresters

WHB/cas

Enclosure

cc: Vice President Gore
Interagency DSEIS Team
Secretary of the Interior
Secretary of Agriculture
Katie McGinty, White House Environmental Policy Director

Regional Society of American Foresters Comments and Position
on
President Clinton's Forest Conference Documents

Introduction

This commentary presents the position of the Society of American Foresters (SAF) affiliates in the Pacific Northwest about the documents prepared as a result of President Clinton's Forest Conference of April 2, 1993, held in Portland, Oregon. It is based upon study and analysis by professional foresters in Northern California, Oregon, and Washington, and brings to bear their special regional knowledge and experiences on issues surrounding the development and implementation of the President's forest plan for the Pacific Northwest.

Comment is confined primarily to the technical, scientific, and administrative strengths and limitations of the questions (issues) thus far addressed. Part I summarizes findings and conclusions and makes recommendations that may be taken to resolve some of the identified conflicts. Part II focuses on the DSEIS, and Part III on the FEMAT Report.

PART I

Summary And Recommendations

The regional SAF affiliates' review of the Forest Conference documents, in particular the DSEIS and the underlying FEMAT Report, leads to the following conclusions and associated recommendations:

- (1) The DSEIS/FEMAT documents have not adequately evaluated the "human and economic dimensions" of its proposed change in federal public forest policy in the Pacific Northwest because it has not produced an identification and quantification of the specific social and economic consequences of their proposed actions.¹
- (2) The DSEIS alternatives do not adhere to the key principles outlined by the President at the Forest Conference. The implementation of the preferred alternative, a document based more on professional judgment and incomplete or theoretical science than on facts, will cause major change in forest practice.
- (3) Operationally untested, the recommended plan is risky. The plan has the potential to influence forestry practice on all forest lands, both public and private. The impacts of this prospect on private forestlands are not explained in the planning documents.
- (4) A forestry program for the Pacific Northwest such as envisioned by the President's proposal must be designed with substantial involvement of professional foresters having day-to-day on-the-ground managerial experience. Their absence on the FEMAT working group was conspicuous. The knowledge and experience of accomplished managers makes them best suited to develop management plans that integrate biological, social, and economic considerations and which comply with existing laws and regulations. Managers, after all, will be called upon to implement the President's plan, whatever form it takes, and be held accountable for the results.
- (5) The FEMAT report and associated documents demonstrate a tremendous effort, given the complexity of issues, the large numbers of people involved, and the exceptionally short period in which it was done. Its shortcomings are partially explainable by this fact alone. Even the FEMAT participants recognize and acknowledge many of the study's limitations. A broader range of options needs to be developed to more fully access the ranges of biological and economic possibilities available before federal forest management policies and practices are established.

^{1/} Such as a full accounting of the direct and indirect employment and family support impacts and the consequential increase in divorce rate, dysfunction in family relationships, alcohol and drug abuse, suicide, domestic violence, drop-out rate, just to name a few.

*Regional SAF Comments and Position
on President Clinton's
Forest Conference Documents*

- (6) The narrow focus and ambiguities of existing legislation and regulation needs to be addressed. The SAF and other professional and scientific societies should be considered in an active role through collaborative initiatives to draft proposals.
- (7) Accelerated research and elaboration is encouraged in the following three areas for which the knowledge base is especially inadequate and the costs of policy choices and managerial error high:
 - a) aquatic and riparian habitats
 - b) species viability assessments
 - c) ecosystems management at the landscape level
- (8) The President's plan is a multi-species plan that strives to focus on ecosystems and ecological communities. Management strategies emphasizing an ecosystem approach rather than a species-by-species approach to managing for biodiversity should be implemented as operational guidelines based on the best scientific information available.
- (9) The Adaptive Management Area (AMA) concept, an integral part of the President's plan, should be supported and encouraged as a way to test and evaluate new approaches to forestry and their performance in regard to the communities dependent on them.
- (10) Monitoring programs must be approached with caution to ensure that they are both scientifically and legally defensible, and are adequately funded over their life to ensure reliability of results.
- (11) Current forestland and resource management planning techniques are often inconclusive, costly, and lengthy. Involved federal agencies should strive to utilize SAF and other scientific societies in re-examining planning technologies.
- (12) The FEMAT did not address directly the implications of the President's plan for non-federal public and for large and small private land owners, a serious oversight that needs repair. The affected regional Society of American Foresters affiliates support the President's objective to relieve the regulatory burden of non-federal lands, and urges the U. S. Fish and Wildlife Service to first assess what contributions are needed to meet the President's objectives, and comply with the ESA. Any 4(d) rule should clearly reflect these objectives.

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- (13) Adequate and stable funding over time must be assured as it is critically important to support community social and economic adjustments and to develop new or expanded forestry programs (especially research and monitoring).

PART II

Comments On Draft Supplemental Environmental Impact Statement (DSEIS) on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl

PURPOSE AND NEED

This section describes, in accurate, general terms, the President's five principles for formulation of a plan (page 1-3) and the federal district court mandates for this DSEIS. The Administration's proposed forest plan and the array of alternatives presented in the DSEIS, however, exhibit serious shortfalls in fulfilling the President's five key principles. Our evaluation of this situation follows:

The President's Principles

Principle 1. "We must never forget the human and economic dimensions of these problems..."

The proposed forest plan and alternatives indicate a lack of knowledge about the economics of the timber industry, the multiplier effect on employment within our region and the marketing complexities of forest products. The job loss estimates are unrealistically low, as are the estimates of the value of the industry to the region (page S-15) and impact to consumers (FEMAT, page VI-38).

Forest products related employment will decline under the Administration's proposed plan no matter what numbers are used and federal timber dependent communities will incur greater suffering. The DSEIS fails to identify and measure the significant social consequences of the Administration's proposal. These should be identified for each alternative. Contrary to the President's first principle, the human and economic dimension has been minimized. The work that was to be accomplished by Labor Secretary Robert Reich and the team on Socio-Economic Assessment is not incorporated into the DSEIS, and as a consequence, NEPA and CEQ requirements have not been met. A new DSEIS needs to be issued with the Socio-Economic Assessment included. Even the Administration's own scientist, Dr. Jack Ward Thomas, said, "to ignore the human condition in conservation strategies is to fail." From a NEPA perspective alone, the Administration's plan fails the President's own directives and does not promote a wide range of commodity and non-commodity values for the general public.

Principle 2. "We need to protect the long term health of our forests..."

"Preservation" alone is not an acceptable plan to protect the health of our national forests. Preservation is already being widely practiced in the management of federal forest lands. Some of the more prominent and large scale examples are the wilderness areas established under the authority of the 1964 Wilderness Act which have placed millions of acres of federal public lands into the National Wilderness Preservation System. The maintenance, enhancement and restoration of healthy forest ecosystems can be done most efficiently with continuing active management that includes timber harvesting and reforestation under scientifically-proven forestry practices.

Given the large acreage of "Reserve" areas (Late-Successional and Riparian) and other areas where forest management is extremely limited (80% of federal land base within Option 9), the DSEIS plan fails to address the resulting increased catastrophic risk of forest fire, disease and insect infestation. Westside Cascade forests experience large natural events beyond human control (such as wildfire, storm damage, volcanic eruptions, etc.) which effect forest health. An independent assessment of risks and natural disasters needs to be made.

Principle 3. "Our efforts must be scientifically sound, ecologically credible and legally responsible."

Policy makers, managers, and scientists should have the flexibility necessary to accommodate new scientific information and changing social values and needs. Proposed forestry methods need to be tested on a large scale, but should continue to be considered experimental until experience proves their worth. In the meantime we should not abandon methods that have proven effective for managing federal forests, as well as the 16 million non-federal acres of growing timber in the Douglas fir regions.

The President asked for a plan that would be "legally responsible". What this means exactly is unclear, but while the DSEIS mentions the existence of important federal statutes (DSEIS, FEMAT II-4), it fails to discuss their interrelationships and whether the alternatives considered satisfy applicable laws and regulations. Consequently, the DSEIS may not be "legally *sufficient*" and therefore subject to possible challenge.

Since none of the alternatives allow active ways to maintain early successional species, any of the alternatives will be illegal if one "early successional" species is believed to be

endangered. Consequently, none of the alternatives are "legally responsible."² New alternatives should be developed which are consistent with the President's directive of being "legally responsible."

Principle 4. "The plan should produce a predictable and sustainable level of timber sales..."

Even the reduced harvest levels projected, although easily supported by forest growth and inventory, may be impossible to attain according to some of the scientists who helped draft the plan. The effects of the Endangered Species Act on timber supply potentials has not been addressed. The prospect of appeals and litigation, the current political climate, and implementation uncertainty imposed on the alternative plans mitigate against establishing a predictable and sustainable level of timber sales in the short or long run. Principle 4 is inadequately dealt with in the DSEIS.

Principle 5. "We must make the federal Government work together and for society".

We agree that all the involved agencies should cooperate in the management of federal forests. Forest managers have been cooperating for decades in the Pacific Northwest, for example in the prevention and control of forest fires (under the auspices of the Clarke-McNary Act) and the control of insect infestations through the Northwest Forest Pest Action Council. Nevertheless, much remains to be done, including development of the President's plan and its implementation. Thus far, that process has essentially excluded operational forestry input from on-the-ground managers, relying instead mainly on input from academic and federal biologists. The plan should be reviewed and adjusted by land managers with operational experience to ensure all operational considerations have been made.

Requirements of Existing Law

The DSEIS does not purport to survey the statutes governing Forest Service and BLM land management activities. However, pages II-4 through II-6 of Appendix A (the FEMAT), upon which the DSEIS relies, set out the instructions of the Forest Conference Executive Committee. These need to reference other important statutes governing the Forest Service, principally the Organic Act of 1897 (ch. 2, 30 Stat. 34), the Multiple-Use Sustained Yield Act of 1960 (16 USC 528-531), the Forest and Rangeland Renewable Resources Planning

^{2/} E.g., compliance with 36CFR 219.26 Diversity: "Forest planning shall provide for diversity of plant and animal communities and tree species consistent with the overall multiple use objectives of the planning area."

Act of 1974 (16 USC 1601-1610). These statutes were in part amended by the National Forest Management Act of 1976, (NFMA). By its own terms, NFMA supplements the prior enactments, rather than replacing them. Among other provisions, important requirements of sustainability and community stability are ignored. This subjects the resulting management actions based on the FEMAT or on the DSEIS to court challenge for violating statutory mandates.

ALTERNATIVES

Each of the ten management/policy alternatives listed in the DSEIS would replace the current multiple use-sustained yield policy of federal forest management with an objective of trying to return most of our national forest lands to "pre-settlement" conditions (DSEIS, S-8). All of the ten alternatives represent radical change in management policy and an astounding reduction in output of renewable resources to a level far below historic production levels and the productive potential of our federal forest lands. While each alternative identifies a probable harvest level goal for the next decade, the prospects for achieving even these reduced harvest goals are slim given the severe operational constraints imposed within the "Designated Areas" where harvesting will be allowed to occur. Little to no harvesting will be permitted on 75% of the over 24 million-acre federal land base within the range of the spotted owl. Thus, compared to potentials today, little productive land will be available for scheduled timber harvest. Most timber harvests and other silvicultural activities would be relegated to these "Matrix" lands.

Under the preferred alternative, relatively intensive forest management and harvesting of federal timber is considered a subordinate use, relegated to a minority status in all alternatives. In the Administration's favored "Option 9", only 20% of the land base (4.85 million acres) is said to be available for timber production in the matrix, with some possibility for minor additional timber volume production from areas other than the "matrix". However, much of even this reduced land base is unlikely to be available for timber production. In reference to "Late Successional Reserves", the FEMAT states that acreage data about these areas has not been "subjected to error analysis or ground truthing." (DSEIS, FEMAT, page IV-53). The accuracy of the data, including the multiplicity of graphs and spreadsheets in the DSEIS and FEMAT, is suspect to foresters with on-the-ground experience and needs to be validated by field professionals. For example, "Riparian Reserves" have the potential of being 1000' wide, if the two 200 year old trees chosen for definition of the zone width are 250' tall; that is 500' on each side of the waterway. In many areas the "Riparian Reserve" maps make it uncertain where any harvesting can possibly take place, particularly when the other categorical restrictions that must be overlaid are considered.

The underlying goal of all the options is plainly beyond the simple "preservation" of existing old-growth forests. The goal is an attempt to return the majority of the region's national forest lands to "pre-settlement" conditions.³ Most of the allowed silvicultural activities are promoted for their ability to hasten the creation of late successional forest types. This ignores the historical fact that only 40-60 percent of the landscape at any one time during the past 1000 years has ever been occupied by late successional old-growth forests.⁴

Harvesting parameters associated with all the alternatives, including Option 9, are highly restrictive and costly, thus precluding harvest of low quality timber and leading to degraded stocking levels. Over time, this will significantly reduce the amount that can be bid for federal timber and will render many stands uneconomical for any future harvesting. Logging systems prescribed will often be those that are least efficient and most expensive (such as helicopter logging), whether or not such systems are essential to protect public resources. The imposition of overly restrictive harvesting practices causes an unnecessary net loss of wealth by substituting unproved and *expensive* harvesting systems for ones that were environmentally sound and profitable.

Timber sales have historically generated positive cash-flow to the U. S. Treasury, in addition to producing income sufficient to offset costs of forest protection and management, including recreation and wildlife programs. The DSEIS alternatives virtually assures an increase in deficit timber sales in the future and in many cases operational and managerial needs will require additional (appropriated) funds. Indeed, the DSEIS predicts negative returns.⁵ It will take a great deal of public tax money to pay for the many programs proposed, yet timber production will be reduced by at least 76 percent (DSEIS, FEMAT, page VI-5) and income even more. Even *if* USFS stumpage prices were to increase by 1/3 as *assumed*, sufficient moneys to fund these programs will not result.

None of the alternatives consider habitat contributions of private or state lands for threatened species. The scientists were aware of the large owl populations found on those managed forests, yet they were not taken into account. The consideration of habitat on state and private forestlands would permit alternatives for considerably higher levels of timber

³/ DSEIS, Pg. S-8.

⁴/ Jan Henderson, *Trends in Amount of Old-growth Forest for the Last 1,000 Years in Western Oregon and Washington, Response to Congressman Robert F. Smith*, September 28, 1989.

⁵/ DSEIS Pg. B-71, paragraph 7.

production from public lands. New alternatives should be developed considering contributions to habitat from state and private lands.

The DSEIS does not make an adequate case for why such a radical change in policy is; 1) necessary to achieve specific objectives or 2) worth the enormous cost in terms of social displacement and lost productivity, which have been ignored. The "science" included in the DSEIS is limited. No opportunity was provided the general public, the industry, the professional and scientific community at large, and the affected communities to develop the alternatives presented in the DSEIS. An alternative plan is needed that recognizes the needs of the nation and the world for renewable resource production, a plan that recognizes the *responsibility* of the U. S. Government to manage its natural resources to meet those needs, and a plan that can provide a stable future for the forest products industry and all forest dependent communities, as well as the non-consumptive needs of society.

Implementation

The DSEIS (FEMAT VIII-32) lists four phases of "Implementation" that would require immediate and concurrent actions, some that are ongoing. This process is supposed to insure planning consistency until an option is chosen. Phase One is now underway to identify actions that are to be completed in one year. Phase Two is for refining region-wide components, training, development of watershed analysis approaches, and (if possible), harvest some timber. Phase Three is to identify actions to be completed in the short term (4 years), hopefully, including continuation of a short-term timber sale program. Phase Four is for identifying and carrying out actions to develop a new forest/provincial plan (1-10 years). The report states, "management activities will continue in keeping with the selected option and current plans until new plans are completed" (DSEIS, FEMAT, Pg. VIII-31), indicating that stability and predictability of national forest policy will remain in question for quite some time.

The conclusions at the end of the chapter are disturbing, "...it is well to note that the selection of any option in this report is only the first building block for ecosystem management. It is visualized that a second phase be initiated whereby the concept is extended to a broader land base and in a larger landscape concept" (DSEIS, FEMAT, Pg. VIII-41). This could be interpreted as a step toward federal regulation of forest management activities on private lands. Additionally, while the report calls for substantial non-federal cooperation, the development of standards and guidelines is left largely to the federal government. The implementation strategy components discussed in the DSEIS include standards and guidelines for managing reserves, etc. Many of the standards and guidelines will conflict with the objectives of private land owners.

The DSEIS recommends formation of an interagency organization of immense proportions to carry out "implementation", and lists legislative changes that may be necessary. This will likely lead to the creation of yet another large, cumbersome, and expensive resource agency.

History Of Resource Management

Important facets of history are ignored in the DSEIS (Pg. 3 & 4, 4-6), as are important aspects of the contribution of natural resources to the region's and nation's growth and security. The timber resources of the Pacific Northwest have for decades fueled the steady growth and vitality of the region's social, political, and economic life. Timber from the Pacific Northwest has been utilized in the building of *one out of every four* American homes in this century.

For example, in the early years of this century the practice of forestry began in earnest to perpetuate our renewable resource based economy. These practices began with protection against fire and later were followed by artificial reforestation when all landowners could be assured their planted trees would not be lost to wildfire.

During the post-World War Two years, forestry on all Pacific Northwest forests improved dramatically as we learned from research how to prevent and minimize fire damage, reforest successfully, salvage timber killed by fire, insects, disease and wind and to increase timber yields by pre-commercial and commercial thinning, fertilization and application of the principles of genetics for growing better trees for reforestation.

An example of the results of these advances in forest management and silvicultural practices can be found in the Gifford Pinchot National Forest.⁶ In 1962, Gifford Pinchot National Forest timber grew at a rate of 156 bf per acre per year. By 1981, and despite a reduction in forestland area of about 20%, the net annual growth of timber on the Gifford Pinchot National Forest had increased to 287 million bf per year or 354 bf per acre per year, an increase in the *rate* of timber growth of 127% in less than 20 years!

TERRESTRIAL ECOSYSTEM

The DSEIS claims that harvesting and road building activities have reduced by about one-half the acreage of old-growth forests which were historically present on federal lands DSEIS, FEMAT IV-185-186). The DSEIS aims to reverse this with a system of "Late Successional

⁶/ Personal communication with Gifford Pinchot National Forest staff.

Reserves" that are proposed as the central feature of the ten options. The determination of the appropriate size for individual reserves is yet to be resolved by ongoing research. Reserves designed to accommodate the Northern Spotted Owl, for instance, are suggested at 30,000 to 100,000 acres each. The apparent motivation behind the concept of such large acreage reserves is to accommodate a myriad of organisms in addition to the targeted endangered or threatened species.

Even within "Matrix" lands managed for timber production, retention of about 15% of late-successional cover within cutting units as small patches of green trees is proposed as an objective of the reserve concept (DSEIS, FEMAT IV-188).

Landscape controls in "Matrix" and "Adaptive Management Areas" would be used to regulate human "disturbances" of the landscape. This proposal will impose a significant restriction on future availability of commercial saw timber. Where stream density is high such as the Oregon Coast Range, the size and configuration of Riparian Reserves will effectively eliminate the potential for commercial timber production in many areas.

Many species inhabiting old-growth federal forests have portions of their range on *non-federal* lands. These lands assume significance because they generally occur at lower elevations and in different ecological zones. When demands for habitat designation are placed on private timber land, a likely result of their proposals would be to extend management to a broader land base (DSEIS, FEMAT VIII-41), the public must embrace the concept of restitution and compensate landowners financially for losing the use of their real property. The DSEIS should not be silent on this matter. Alternatives need to be developed and assessments made which determine the probable cost to the taxpayer of this restitution on private lands.

AQUATIC ECOSYSTEM

The DSEIS treatment of "Aquatic Ecosystems" presents no new information and ignores some important existing data. Information presented is a collection of forest practices information from the 1970s and Washington state timber/fish/ wildlife project data from the 1980s. Stream temperature discussion in the DSEIS presents out-dated theory that elevated temperatures are deleterious or lethal in virtually all cases. The "Aquatic Ecosystems" sections and associated alternatives need to be rewritten and re-analyzed in light of all existing information.

Non-forest related impacts such as urbanization, marine fishery activity, estuarine development, agriculture land development and management, etc., are dismissed in the

DSEIS as having little or no relevance to salmonoid survival on forest lands. The importance of this omission is typified on a Yakima River tributary. The tributary stream leaves private forestland with substantial clear, clean flow. Having passed through agricultural lands, it enters the Yakima River almost dry due to irrigation water withdrawals. Alternatives need to be developed which address an integrated approach to saving threatened and endangered species.

The need for buffer zones has long been an issue, with much scientific and operational effort expended to design and manage them. State forest practices acts and regulations in Washington, Oregon and California contain sophisticated buffer zone and cumulative effects standards and management prescriptions to protect water quality, and fish and wildlife habitat. Inexplicably, the DSEIS ignores that work and instead proposes a series of "no-cut" buffer zones far in excess of anything that would be recommended based on existing information.

The aquatic ecosystem section fails to integrate the analysis and recommendations of the aquatic ecosystem report with other disciplines. After recognizing many flora and fauna are important in and to the aquatic environment, the DSEIS uses salmonoids as the nearly exclusive target fauna. While the report is in several respects a good start, further work should involve other disciplines and include other philosophies.

It is disappointing and scientifically inaccurate for the DSEIS to perpetuate the philosophy that "natural" conditions are the *only* conditions that can provide high quality aquatic environments. Many undocumented sweeping statements are made about the poor conditions of state and private aquatic lands. Little credit is given to recent changes in forest practices acts, and no recognition or opportunity is given to manage aquatic (or terrestrial) systems for excellence for many values. The team limited itself to alternatives principally relying on the natural aquatic environment can provide all elements of high quality habitat. Other pro-active alternatives need to be developed.

ECONOMIC CONSIDERATIONS

There is so much uncertainty about the level of federal timber harvest under preferred Option 9 that comprehensive economic evaluation is difficult. Additionally, legal maneuvering, even after a harvest level is selected, may stall or halt sales. Short-term harvests are contingent on having adequate time to prepare sales, so agencies, timber purchasers and their employees and customers cannot be assured that the current timber famine in the Pacific Northwest will be eased. The long-term outlook could be worse than projected.

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Statistical inconsistencies (i.e., non-timber value added and ownership representation) exaggerate the economic contribution of minor forest products. It is unrealistic to expect that recreation and fisheries initiatives will cover the drop in forest industry employment (timber harvests drop to less than one-fourth of federal forest sustained yield capability). Several independent assessments should be made of the efforts of each alternative on minor forest products, fisheries and timber and their costs, values, impacts and employment.

Restricting forestry practices on federal forests in the Pacific Northwest is claimed to enhance its attractiveness for new businesses, residents, and tourism opportunities. The DSEIS support for tourism mistakenly considers the low-paid and seasonal tourism-related jobs as a viable substitute for high-paid and less seasonal forest industry jobs. Not even the DSEIS team members believe that this will provide any meaningful offset to the losses in real wealth, standards of living and social fitness caused by the Administrations proposal (DSEIS, FEMAT VII-71).

Tourism is largely dependent on roads and access to the forests. Where logging receipts do not pay for road maintenance, costs of maintaining roads for tourists will be high. In addition, the tourist season generally coincides with the fire season in the Pacific Northwest. The "old growth" condition will have a high fire danger. An independent assessment needs to be made of the total costs of road maintenance and fire protection relative to various amounts of tourist income and tourist appeal for each alternative.

The DSEIS ignores the adverse impact on game populations that will result from the management emphasis to create and preserve late successional forest types.⁷ This diminishes consumptive use benefits of wildlife. An estimated change in big game and hunting economic impacts needs to be assessed for each alternative.

The DSEIS claims that reduced timber production from federal lands will be compensated by increases in forest investments and management on non-federal lands. Nothing is said of the fact that decreased federal harvests will encourage departure from sustained yield harvest of timber and non-timber outputs on non-federal lands (and other forested regions of the world), creating precipitous drops in timber production in the future and diminishing long-term sustained productivity for the region, nation and the world. Global trade models (e.g., CINTRAFOR, University of Washington College of Forest Resources) allow projections of locations of increased timber harvest elsewhere in the world, and increased use of substitute

^{7/} Adams, Alig, et.al. Western Washington Timber Supply Study, University of Washington, 1992.

materials with various levels of harvest reductions. These tradeoffs need to be explicitly stated and calculated for each alternative.

Forest industry employment reduction data presented in the DSEIS do not account for total primary and secondary jobs and family support which are true measures of economic and social impact of the current and foreseen severe timber reductions in the region.

The DSEIS needs to assess and describe the secondary job losses for each alternative. The DSEIS ignores the urban dependency on basic industry support from rural areas, the sourcing area of wealth - - the forests, fields, mines, wells and the seas. The effect of current as well as foreseen timber shortage on building material costs to consumers is not adequately considered in the DSEIS. These cost changes need to be calculated for each alternative.

The DSEIS suggests that log shortages in the Pacific Northwest can be mitigated by imports from other Pacific Rim countries. This prospect will have impact on forest lands of foreign source areas, and the DSEIS must disclose what they might be. The DSEIS needs to describe the potential increased forest harvesting outside of the United States, where it will come from, and the potential ecological consequences based on the best available information (i.e., CINTRAFOR Global Trade Model) for each alternative. In a related matter, the DSEIS gives no consideration to the potential risk of introducing forest insect and disease pests that would accompany increased log imports. The risks of introduced pests and costs of avoiding those risks needs to be assessed for each alternative.

COMMUNITY IMPACTS

The objectives of the Social Assessment (Assessment) stated in the DSEIS are as follows:

1. Describe the nature and distribution of the social values and uses found in the range of the northern spotted owl.
2. Describe how these values and uses would be affected by the management options.
3. Identify how different constituents are affected by the changes stemming from the options.
4. Identify opportunities or strategies for dealing with the consequences for people.
(Appendix A, page VII 4-5)

The Assessment does not adequately address *any* of these objectives. Presumably objectives 1 & 2 were designed to measure the specific benefits from forest use that are sacrificed and gained by the proposed change in federal forest policy and management, and provide some quantification of cost/benefit using a social value scale. The Assessment fails to define forest

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benefits in anything but the most vague terms and does not measure and quantify those benefits. More specific quantitative measures need to be done for each alternative.

Objectives 3 & 4 should define in specific terms the full social price tag for the proposed changes in federal forest policy and management. The Assessment fails to meet these objectives as well. The Assessment focuses on a description of "attitudes" and "perceptions" about federal forest policy and fails to identify and measure the potential social consequences of the Administration's proposal to the U. S. citizens and to the world community.

The Assessment admits its own inadequacy by calling for "[a] comprehensive, region wide assessment...that...is needed to analyze the effects of any selected option for federal forest management..." (Pg. VII-10). It also states that "...this social assessment report should be viewed as illustrative of what can be done, rather than as the source of definitive answers." (Pg. VII-78)

The Assessment should be neutral concerning the promotion or rejection of proposed change. It is *not*. The Assessment actively promotes change in federal forest policy and denigrates management choices of the past. A more objective assessment needs to be done. The Assessment states that "...resource allocation decisions are fundamentally political choices amongst values..." (Pg. VII-17) and that "...politics is the forum for choosing among values and promoting some values over others." (Pg. VII-34) The Assessment acknowledges that the *perceptions* of constituents drives politics and, as to forest management, those perceptions are very often uninformed. But from here the Assessment takes a hard turn and suggests that ignorance of the facts is *acceptable* in the debate over federal forest policy. Misconceptions and uninformed opinions are to be considered as valid social judgments. Public opinion surveys which detect *unspecified* "concerns" or "worry" about the "environment", are interpreted as justification for specific radical change, such as the Administration proposal. This interpretation needs to be explicitly justified for each option so that the merits can be evaluated.

The Assessments survey of "community capacity and consequences" (DSEIS, FEMAT VII 55-60) shows that *all* communities surveyed (except one small tourist town) indicated that a positive impact and the least negative consequences would flow from a return to harvest levels of 1985-1987, the highest harvest level option included in the survey. This survey was conducted before the "options" were known, and of course the 1985-1987 harvest level is substantially higher than *any* of the Administrations 10 listed "options". This also illustrates that the list of options presented within the DSEIS was incomplete given the requirements of NEPA to adequately disclose the full range of possible alternatives and to give the reasons why that list of alternatives may be narrowed.

PART III
Forest Ecosystem Management:
An Ecological, Economic and Social Assessment Report
of the
Forest Ecosystem Management Assessment Team (FEMAT)

Introduction

The FEMAT report demonstrates a tremendous effort, given the complexity of the issues, the large number of experts involved, and the short period of time in which it was done. It purports to document a wide range of scientific opinion in the public policy context of the Endangered Species Act (ESA), National Forest Management Act (NFMA), Federal Land Policy and Management Act (FLPMA), and the National Environmental Policy Act (NEPA). The report represents an important first step toward the resolution of the Pacific Northwest and Northern California Forest impasse even though it falls short of resolving the issue.

FEMAT participants and many SAF members recognize many of the limitations of the study. In the sections that follow, we call attention to a number of them by way of added or shifting emphasis, thus identifying useful areas of required future inquiry, follow-up, and process improvement.

Ground Rules for FEMAT and Revised Legislation

FEMAT participants identify in the report, and verbally reaffirmed on many occasions, the limited "decision space" afforded the team. President Clinton outlined in his statement of mission (FEMAT excerpts, pp. 3-6) the tasks of the three forest conference working groups. Prominent among them were the "human and economic dimensions of the problems." These larger concerns were voiced many times by individual conference participants (FEMAT Appendix VII-A). In reality, the "outcome" of the Forest Conference was largely dictated by consideration of biodiversity and species viability, both of which have strong legal roots in NFMA, FLPMA, NEPA, and ESA. The human and economic dimensions of the issues (mainly involving timber, but mining, grazing, consumptive terrestrial wildlife, and other resources as well) were superficially considered only after biophysical constraints were met. Only Option 9 offered a small window toward social and economic considerations. The Society of American Foresters believes that the management of natural resources must significantly account for other than just biophysical resources like biodiversity and species viability.

A related matter is that FEMAT emphasizes extreme caution to avoid perceived irreversible consequences. Thus, FEMAT gives precedence to resolving questions of biodiversity and species viability. Whether resolving biodiversity and viability questions should be overriding, or what level of risk is acceptable, needs to be questioned and decided.

Legislative and regulatory impediments are displayed prominently in Forest Conference documents (FEMAT, chapter 2, 96-98; 104-105), and the DSEIS (Appendix E-19). They are also implicit in a number of concerns we have voiced here. The climate is not promising now for legislative and regulatory change. Nevertheless, scientific and professional groups should collaborate in examining opportunities to develop tentative proposals, thus positioning themselves to participate in future Administration and Congressional initiatives to resolve ambiguities and inconsistencies in legislation and regulations affecting natural resource policy and management. The basic environmental policy framework and legislative authorities of land management agencies should be examined with a view to enlarge and clarify the decision space now available to the agencies within which to develop and implement forest management plans.

Other options need to be identified and considered, particularly some that offer real options to improve the social and economic well-being of people. Such considerations may not simplify the planning and decision-making process, but will give more people a more equitable stake in the outcome.

Scientific Underpinning

The FEMAT Team Leader readily acknowledges that the FEMAT Report is not a scientific one, but a set of land-management alternatives requested by the President from a group of scientists. A problem in the report is that the distinction between well substantiated information and untested hypotheses is often blurred. The report acknowledges freely that much more information is needed (FEMAT, chapter 8, pp. 22-23). The authors also acknowledge that science alone cannot and should not resolve the involved social, economic, and political issues.

Three parts of the FEMAT report are based on seriously limited information, and if in error, all have sweeping consequences for biological, social and economic outcomes. The role here is for scientific and professional organizations to recognize the weak underpinnings for these areas and to encourage and participate in scientific and technical discussion and accelerated research on them. The problem areas are (1) aquatic and riparian ecosystems; (2) viability assessments and (3) landscape-level ecosystems management.

- Aquatic and riparian ecosystems (FEMAT, chapter 5). Riparian reserves set aside 0.62 to 2.88 million acres (FEMAT, chapter III, table 5) depending on the option selected. Furthermore, the riparian reserves have the capacity to deny access or render inoperable the adjacent matrix lands. Especially inadequate in our estimation, is the scientific basis to support the findings embodied in FEMAT Figures V-12 and V-13 (FEMAT Chapter V, p.

27). The information contained in these figures has far-reaching consequences for riparian reserves. We recommend that additional science be brought to bear on these issues as quickly as possible.

The overall FEMAT procedure was to develop options using one set of criteria and to evaluate them against another set, with sufficiency of habitat for individual species being the most prominent. While not ecosystem based, this approach was consistently followed for terrestrial ecosystems, but not for aquatic ones. While the document discusses the variables important to aquatic and riparian habitat structure and function, it defines options entirely in terms of reserves. When evaluating the options, key factors (two out of three equally-weighted variables) are simply amounts of reserved lands, and not some measure of ecosystem structure and function. Thus, options are evaluated largely on the basis of reserved area, without any reference to ecosystem structure or function. Additional science should be brought to bear on this problem as quickly as possible.

Questions of population genetics in salmonoids should to be addressed in greater detail, drawing on related work in evolutionary biology, forestry, and agriculture. Are all fish stocks significantly different genetically? Can fish stocks be genetically reconstructed? Can hatchery programs preserve genetic diversity even as they augment fish stocks? A related issue--what are other sources of salmonoid losses, such as sports and commercial fishing, dams, farming, and irrigation practices, marine mammals, and so forth? Where in this broad range of depredation losses are risks the greatest and remedial actions most cost effective?

An emerging positive development, in our estimation, are the studies of forest/fisheries interaction commissioned by the State of Oregon under direction of Professor Botkin of Santa Cruz University, and the study of cumulative effects by Professors Beschta and Boyle of Oregon State University--the results of these studies should be available in 1994. More such independent studies should be commissioned for this and related questions.

- Species viability assessment. FEMAT extended questions of species viability beyond spotted owl, marbled murrelet, and salmonoids to include other plant and animal groups. Utilizing panels of experts on various taxa (FEMAT, chapter IV) assessed the potential for survival. Given the time available to FEMAT, we are hard pressed to suggest a better alternative, but this is another example of the problems created by a 60-day "decision space" allocated to the FEMAT effort.

Nevertheless, concerns remain that the viability assessments were highly judgmental and subject to strong protective biases that experts often display toward their areas of interest. Independent inquiries and accelerated research into questions of species viability and

biodiversity are needed. Beyond setting aside representative ecosystems, we think that inquiries should be expanded to include options for (1) off-site conservation for important and vulnerable plant and animal species; (2) techniques to restore species on already degraded sites; and (3) biotechnical opportunities to capture especially important characteristics of plants and animals.

- Ecosystems Management. FEMAT Team Leader Thomas has said of ecosystems management, it "is not going to be simple. It's not going to be cheap." (FEMAT Appendix VII-A, p. 88). Ecosystems management may be appealing, but as the Scientific Analysis team reported in March 1993, the framework for ecosystems management simply does not exist.

Ecosystems are generally seen to cross ownership boundaries and to be dynamic. Options to manage ecosystems, terrestrial and aquatic, should recognize this and define desired conditions in terms of structure and function. Options explored by FEMAT were, however, largely derived from individual species concerns, cover only Federal lands, and are expressed principally in terms of land use rather than resource condition. While this may reflect another goal to meet existing law and policy, the use of ecosystem concepts to derive options, rather than just evaluate them, was never engaged by FEMAT, a serious fault.

Professional and scientific organizations can help resolve issues such as these by defining how and at what level ecological principles should be applied to protect biological diversity across the complex mosaic of forest ecosystems. Included would be defining an objective process for identifying options for incorporating late-successional forest reserves as part of a broad set of ecologically-based alternatives for protecting biodiversity while allowing flexibility for a wide array of forest resource uses. In short, there is no consensus about what ecosystem management really is, much less how to do it.

Ecosystem vs. Species Preservation

Managers of public forestlands and resources must face the issue of managing ecosystems vs. managing individual species for their preservation. To be sure, the two approaches are not independent--managing ecosystems requires consideration of individual organisms, and managing for a species requires assessments of habitats which exist in an ecosystem context. Still, it is obvious that the list of organisms eligible for listing under the ESA (FEMAT, chapter IV) could be incredibly long, and that wholesale gridlock on all federal lands, and many private lands as well, is likely if single species preservation is pursued to its full extent. Additionally, we must consider that the ESA and other environmental legislation applies to lands outside the Pacific Northwest, few of which have yet to feel the impacts visited on this region. Therefore, emphasizing an ecosystem approach to managing public forestlands and resources probably better serves the long-term needs of the nation than a single species approach.

Even though an ecosystems approach does not guarantee the viability of all threatened organisms, it does give most (if not all) a chance for survival. The approach also allows for discovery of or knowledge about unknown or poorly understood organisms and ecological processes. FEMAT recognizes the practical impossibility of providing for all organisms that have been or will be discovered and suggests that this issue be addressed.

Discussions and inquiries are needed on questions about ecosystem vs. species protection. Much information about natural areas protection and management exists going back to the 1920s. The implications apply to areas external to the Pacific Northwest, which already has the strongest program in the coterminous United States for protecting a variety of ecosystems (research natural areas, Nature Conservancy lands, botanical and geological areas, as well as state and national parks, wildlife refuges, and components of the National Wilderness Preservations System). Many advantages lie in setting aside representative ecosystems in the Pacific Northwest (and elsewhere in the nation) that represent habitat varieties. To be sure, there should and will be efforts to save important and highly visible organisms (i.e., California condor, woodland caribou, black-footed ferret), but the overall emphasis should be toward ecosystems rather than individual species protection. An ecosystems approach to managing for biodiversity and species viability will likely require new or modified legislation.

Adaptive Management Areas (AMAs)

The AMA concept, limited by FEMAT only to Option 9, the President's Forest Plan, is attractive, if AMAs function as intended (FEMAT, Appendix Chapter VIII, pp. 17-22).

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These include innovative silvicultural approaches to maintain forest ecosystems, developed with strong community participation. The emphasis should be on testing new approaches to forest management. Monitoring and feedback loops are intended to modify practices in old growth and riparian reserves that are not already set aside under statutory or administrative withdrawals. SAF has 3 major concerns: (1) that adequate funding will not be forthcoming to carry out the work for which AMAs are established; (2) that too narrow a range of options will be considered for that work; and (3) that attempts will be made to freeze the land status of current old-growth reserves and riparian zones, and disallow in them problem intervention through active management. Professional and scientific organizations should actively support the AMA concept in all its dimensions--funding, experimentation, feedback, and modification of practices to meet biodiversity and species viability criteria.

The concept of landscape level experiments is useful. One of the great shortcomings of the current knowledge base is that most experimental work has been done at the organism and stand level, not at the landscape (or watershed) level. There must be well-designed research to test hypotheses on landscape level practices. Small scale studies are not sufficient to provide the information needed to measure and to understand forestland and resource management effects in an ecosystem context at landscape levels.

Monitoring

There are repeated calls for monitoring of various practices in FEMAT and in the DSEIS. However, the track record on monitoring by federal resource agencies is abysmal. Well-intentioned long-term monitoring studies are entered with enthusiasm only to fail for a variety of reasons including lack of follow-up, shifts in agency priorities and funding, and faulty design that meets neither statistical rigor nor legal requirements. Those parties engaged in new monitoring efforts must be aware of these problems. Monitoring programs should be addressed with all of the rigor required of long-term scientific studies.

Land-Use Planning

There are repeated calls in the several Forest Conference reports for a new round of land-use planning, at the watershed level. Such planning will be far more complex than the costly and protracted forestland and resource planning exercises (for the national forest system) under NFMA. The temptation for on-the-ground professional people, academics, and the research community will be to push state-of-the-art practices to enhance the role and capability of technology and information systems to solve the issues. Interest groups will encourage detailed planning, and if the past indicates future trends, such initiatives could delay rather than advance decision making. No matter how dedicated, it is a difficult task for

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the general public, agency leaders, and elected officials to organize, absorb, and analyze all of the information available and presented to them by planners. Shifting from forest stand-level management planning to a more ecosystem/landscape-based approach will not make the task any easier.

Professional and scientific organizations should collaborate with each other and revisit issues of land-use planning. Are there less costly techniques to identify the issues and to present them for public discussion? How much information is enough? At what cost? What is the stability of past planning exercises, and what are the lessons for the protection and management of resources? Finding ways to reduce costs of land-use planning, could liberate funds for on-the-ground use to resolve forest health and related problems.

Non-Federal and Private Lands

FEMAT understandably avoids discussing the consequences of adopting the President's Forest Plan for non-federal public lands and for private lands, in the Pacific Northwest, elsewhere in the nation, and globally. Land management planners and managers must be alert to the significance of this omission. While FEMAT was not chartered to handle this matter, the Administration nevertheless has an obligation to recognize that adopting the forest plan (Option 9) has significant impacts on environmental quality elsewhere in the nation, and globally as well. These impacts must be disclosed.

The primary effect of the FEMAT report on non-federal lands revolves around the question of what contribution is required of non-federal lands to provide for conservation and recovery of the northern spotted owl, using the contribution from federal lands as described in the FEMAT report as the foundation.

The U. S. Fish and Wildlife Service will likely address the contribution from non-federal lands through a proposed section 4(d) rule authorized by the federal Endangered Species Act. this proposed rule will likely address the contributions required from non-federal lands needed to meet the conservation objectives for the northern spotted owl. It will also likely describe the conditions under which non-federal landowners may be relieved of the incidental take prohibitions of the northern spotted owl resulting from specific land use activities.

One of President Clinton's objectives is to "...ease restrictions on timber harvest from certain non-federal lands..." by improving management of federal lands. The Endangered Species Act requires non-federal landowners to only avoid a take of a listed species. The U. S. Fish and Wildlife Service needs to assess what contributions are needed to meet the President's objectives, and comply with the ESA. Any 4(d) rule should clearly reflect these objectives.

Agency Coordination

The Agency Coordination Working Group Report (DSEIS Appendix E, and FEMAT Chapter VII, pp. 102-114) correctly points out many of the reasons that coordination among agencies has not worked. But the remedial actions to correct shortcomings are less than convincing. An important missing ingredient is an administrative and legislative determination or commitment to make interagency coordination work. Terms of reference for interagency coordination groups need to be precise and spelled out in formal documents that define objectives, procedures, authority to make decisions, and termination procedures, and be approved by top-level Administration officials, with knowledge and approval (if necessary) by legislative leaders. Independent (external) studies should be encouraged of interagency (and intergroup) coordination and collaboration. What ingredients led to success or failure? Sufficiency provisions on the issues addressed by the interagency task forces may be necessary considering that the capacity of disaffected individuals or groups to avoid resolution of conflict under current ground rules is virtually unlimited.

Funding

Reports of FEMAT and the other two task forces described a complex and strongly intra- and interconnected system of recommendations; the failure of any one part will reverberate through the entire program.

Not the least of these issues is funding. The Working Group on Labor and Community Assistance proposes a \$1.2 billion program over a 5-year period, but it appears to be minimal. We cannot assess the validity of this number. Our concern is that the impacts on people and local communities will be substantial and painful. FEMAT presents no explicit description of what appear to be inordinately adverse social and economic impacts of major proportions for people and communities in the region covered by the plan. Funding levels recommended by the working group seem totally inadequate to account for social and economic readjustments planned for and needed by affected communities.

Another budget aspect (DSEIS Appendix E, pp. 23-26) beyond people and communities involves the tasks of planning, coordination, research, and outreach identified in FEMAT. These budget estimates were not available to SAF at this writing, but professional and scientific organizations must remain alert to support appropriate levels of funding. Given tight budgetary times, it will be tempting for the Administration and Legislative branches of government to reduce and/or delay, research on traditional programs (forest protection, tree improvement, harvesting and utilization), the results from which are essential to other public agencies and small woodland owners who will be called upon to provide more of the goods

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and services no longer available from federal lands in the Pacific Northwest. The same reasoning about budget shifts and reductions can be applied to other activities of the several agencies involved in implementing various aspects of the President's forest plan.

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EXECUTIVE OFFICE OF THE PRESIDENT

Washington, D. C.

FAX TRANSMITTAL COVER SHEET

DATE:

01-Nov-93

TO:

WILL STELLE

SUBJECT:

MEETING WITH NGA

FROM:

RENEE P. HELM (202) 395-4590
OFFICE OF MGMT AND BUDGET, NRD

25JP
NOV
(TRAVEL)

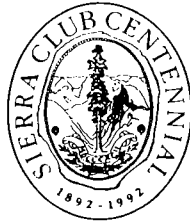
If there are any problems receiving this transmission,
please call the sender, or (202) 395-7370.

The meeting with the National Governors Association has been scheduled for this Thursday (Nov. 4th) at 11:00 a.m. in room 10103 NEOB. Margie Siegel will bring about 8 participants. Oleta Fitzgerald of USDA has also been invited.

Please let me know if you will be able to attend.

Thx.

SIERRA CLUB



730 Polk Street San Francisco, CA 94109 415•776•2211 Fax: 415•776•0350

November 5, 1993

Will Stell
Office of Environmental Policy
The White House
Washington, D.C. 20500

Dear Will:

We have submitted the enclosed comments on the Northwest Forest Plan DSEIS to the team in Portland. We feel the suggestions contained in them are necessary and workable means to achieve an ecologically sound and legally defensible plan.

Among the key points are:

- * Establish no-logging areas
- * Preserve roadless areas
- * Restrict thinning and salvage guidelines
- * Increase riparian protection
- * Expand road conversion program
- * Acquire critical habitat
- * Establish no more than one AMA per state

These changes can be accomplished easily. For instance, the roadless area provision is a rather simple GIS assignment. Most of the management language requires only specific modifications to the existing text of Alternative #9.

The time extension should provide an opportunity to carefully consider improvements to the draft plan. I would appreciate an opportunity to discuss our suggestions with you personally. Please let me know when you will be in the northwest. If necessary, I could arrange to come to D.C.

We wish to work with you to forge a plan that provides for a sustainable forest ecosystem and a sustainable forest industry. Thank you for this opportunity to contribute to that effort.

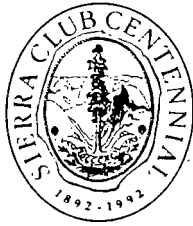
Sincerely,

A handwritten signature in dark ink, appearing to read "Charles C. Raines".

Charles C. Raines
Chair, Ancient Forest Campaign

9004 - 20th Avenue N.E.
Seattle, Washington 98115
206 523-1347

SIERRA CLUB



730 Polk Street San Francisco, CA 94109 415-776-2211 Fax: 415-776-0350

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

On Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl

Comments by the

SIERRA CLUB

October 26, 1993

The Sierra Club has been working to protect the ancient forest of the Pacific Coast for over a century. During the early years, we saw the cut and run devastation on private lands across the landscape. This was followed by the rapid rise in logging of our public lands. Recent administrations pushed logging on our federal lands far beyond sustainable levels- levels that threaten not only individual wildlife species but the very fabric of the ecosystem.

Recent improvements in forest practices and land management plans have not gone far enough to correct the problems. The management of our federal forests have even been declared illegal by federal judges. This current situation is a recipe for disaster.

This document constitutes the Sierra Club's basic comments on the Draft SEIS. Supplementary input from our three northwest chapters (Cascade, Oregon and Redwood) will provide additional site specific details and are incorporated here by reference.

I. GENERAL COMMENTS

The Forest Ecosystem Management Assessment Team (FEMAT) Report presents a grim assessment of the ecosystem today. It provides considerable argument for a strong, ecologically oriented plan. We have quoted extensively from their review in our comments, as they provide clear rationale for our recommendations. The FEMAT assessment also supports our contention that any of the alternatives must be strengthened significantly to meet legal and scientific requirements for viable ecosystems.

In these comments we will not reanalyze the viability estimates nor repeat all the findings. The conclusions are inescapable based on the information presented. We have highlighted text from the report to illustrate the grave situation and the potential solutions. It is clear that the proposed action

(Alternative #9) will result in further extirpation of species from federal lands, and will continue to fail to meet legal requirements. It must be changed.

All taxa must be afforded sufficient protection to remain viable. This includes invertebrates and non-vascular plants, which are essential for the ecosystem to function well. Of particular note *"[t]he survival of most conifers and many flowering plants depends on their association with these mycorrhizal fungi for the uptake of nutrients and water."* (FEMAT IV-78) Many of these taxa are at risk today. This requires special measures in the plan.

With the loss of late-successional characteristics on non-federal land, the federal lands become even more important. Private lands will soon be converted to management regimes that will log all merchantable stands at 60 years or less. Weyerhaeuser signs indicate that stands near Mt. St. Helens will be logged at 45 years. Obviously, this will not even provide for mature forests. So virtually no late-successional forest habitat will be found over huge areas of the northwest. This presents numerous problems particularly in gaps such as the I-90 corridor. The coastal provinces are noted by the FEMAT as especially deficient in late-successional forest.

Isolation of areas such as the Olympic Peninsula is also a critical problem. Without corrective action, this will lead to additional species listed as threatened.

Current fragmentation of federal forests is severe. Remaining blocks of forests must remain intact, and restoration of the disturbed portions of the landscape initiated.

Old-growth forests have tremendous ecological and cultural values, well described in numerous publications. This is the scarcest forest type. It is also the type that man is least able to reproduce, if at all. Any experiments started now will not be completed for two to three centuries. It is a resource that deserves full preservation on our public lands.

II. PRESIDENT'S PROPOSED FOREST PLAN

We were encouraged by President Clinton's promise to prepare a plan for the northwest forests that would sustain not only individual species, but the entire ecosystem.

Despite a concerted effort the **product falls far short of achieving that goal.**

As currently described, the preferred alternative (Alternative #9) is **inadequate to meet legislative mandates nor will it assure ecosystem viability.** The FEMAT Report indicates that the plan will not assure the viability of all native species, nor will it prevent species from becoming endangered.

While the FEMAT report provides abundant evidence of the shortcomings of Alternative #9, we will point out only one specific example. The EIS discloses that on lands managed under the strategy of Alternative #9 no species of old-growth associated lichens, and no species of old-growth associated

mollusks are expected to maintain well distributed populations. (DSEIS 4-70 and 4-82) This applies to both local endemics and currently broadly distributed species.

A plan that reduces two entire classes of organisms to the point that no species remain well distributed is simply unacceptable. The final plan must provide for a very high probability that all species have sufficient habitat to not only to maintain viable populations, but to maintain reasonable distributions.

The evaluation of ecosystem function produced low ratings for all alternatives considered, indicating severe distress in our forests and the risk of worsening it with the options considered. Some options were rated higher than the preferred alternative. Alternative #1, for example rated higher in five of six subcategories. The major differences was the larger size of the reserves. Several revisions to the proposed plan would improve the situation, and we have incorporated those in our recommendations (see below).

Individual species varied greatly, but numerous taxa fared quite poorly. For example, Alternative #9 has **low viability ratings for several species of vertebrates**. Again, Alternative #1 has higher viability ratings for both spotted owls and marbled murrelets. Amphibians have specific requirements and do not disperse readily. Low ratings for several species indicate that the proposed plan is deficient in providing for these taxa. Several species of mammals also fared poorly, particularly bats.

The FEMAT notes that many of the less-visible species are essential to the functioning of the ecosystem. The preferred alternative is particularly poor in providing for these species. It has poor viability ratings for numerous invertebrates which are the basis of the food chain. In fact, several species of mollusks would be among the more than 100 species that would be at risk of extirpation on federal lands under Alternative #9.

It should be noted that for many species "at risk of extirpation on federal lands" is virtually synonymous with "doomed to extinction". The species being considered here are all known to be closely associated with the old-growth forest ecosystem. This system has already been devastated on almost all non-federal land. There is simply no way that old growth dependent species that have been "extirpated from federal land" can be expected to have a reasonable chance of survival. Thus, the legacy of the proposed plan, even with the mitigation efforts noted in the DSEIS, would be a continuing stream of endangered species listings, and almost certainly, extinctions.

The preferred alternative would also result in **restriction or extinction of many lichens, fungi and plants** that are essential to the proper functioning of the nutrient cycle of the forest.

Potential improvements would come from larger reserves, full riparian reserves and establishing special areas.

Among its suggestions, the FEMAT noted that more acreage of late-successional ecosystems in the low elevations of Oregon would improve the proposed plan's ecological viability. (FEMAT IV-72)

Re-establishing fire in its natural context was recommended by the FEMAT. We suggest ways in which that can be done without further damage to intact forests and roadless areas.

Of critical concern is the vulnerability of fish stocks. The President's Plan provides **only a 65% likelihood of attaining well distributed populations of salmon**. Further, it would have a 35-40% likelihood of major gaps or restrictions to refugia. Moreover, Cutthroat and Rainbow trout only receive a 60% chance for healthy, well distributed populations. (FEMAT V-69) This is clearly not in compliance with the law.

In contrast, Alternative #1, due to full riparian protection and larger reserves, achieves an 80% likelihood of well distributed populations of the salmonids reviewed. (FEMAT V-67,69)

The proposed plan is a grand experiment, relying heavily on new and unproven theories. The scientific team report cautioned that *"...the use of such silviculture [for restoration] remains largely untested in the Pacific Northwest, and is to be treated as a working hypothesis..."* (FEMAT IV-72)

The fact that invasive experiments would be conducted on a subject (LS/OG forests) that is poorly understood and under severe stress greatly increases the risks of that experimentation. While some will argue that the basic structure and function of this system is well enough understood to allow reasonable certainty in testing new strategies, this is not realistic. It should be noted that in less than a year the number species considered as "closely associated with old growth forests.." has increased significantly. Thomas et al, in, 1993, considered 667 species. The DSEIS, later in the same year, considered 1,084. The DSEIS explains that this increase partially due to "new information" (DSEIS 3-31). What will be known next year? More important, what will not be known next year? What species whose association with the old growth system has not yet been recognized will be endangered by this experimentation?

Currently, ill-conceived and damaging experiments are planned on some national forests (e.g., Timothy Meadows, WEN). Local rangers have used this experimental approach as an excuse to increase road construction and logging in an areas of late successional forest. These should be curtailed until the regional plan is adopted.

While we applaud the restoration initiatives in the preferred alternative, this is at the expense of large areas of natural, diverse and vigorous forest. It even allows thinning and salvage of untouched natural forested areas. **A major flaw is the reliance on "restored" forests while eliminating existing LS/OG forest habitat.**

In fact, on federal lands **only 3/4 of the late-successional forest will be protected** (FEMAT IV-54). The remainder, **nearly 2 million acres, will be available for logging**, some of which is currently protected by the agency forest plans.

The FEMAT noted that maintaining LS/OG on private and state lands was an important element. However, the plan makes **no provisions to provide late-successional forest on non-federal lands**. There will be essentially no late-successional forest remaining on private lands. The recent Habitat Conservation Plan (HCP) approved by the Fish and Wildlife Service (FWS) as part of an incidental take permit provides 60 year rotations all lands that are loggable under state rules. This weak

proposal is a poor model for recovery efforts across the region, and should be changed. It also argues for further protections on federal lands.

The plan **disregards the critical importance of roadless areas**. It allocates over 685,000 acres of inventoried roadless lands to the matrix (FEMAT V-53), where it will be subject to intensive pressure for logging and road building, especially in the first few years of the plan.

The proposed plan **deletes protection for forests provided in existing forest plans** specifically for late-successional wildlife species. (FEMAT III-23) While some of these areas are incorporated in the LS/OG reserves, many are not. They are important as refugia for amphibians, bryophytes, fungi as well as vertebrates. Despite other benefits such as recreation, the underlying allocations were never discussed with the public. The allocations would be merely dropped without consideration of these other values.

The preferred alternative does **not provide permanent protection** for important resources. *"It should be recognized that the fate of Administrative Reserves outside of Late-Successional and Riparian Reserves will be determined in the phase II planning effort- i.e., the continued status as Administrative Reserves is not certain."* (FEMAT II-25) No long term resolution is possible when there is high uncertainty about the fate of these administrative and riparian reserves. The potential for shifting reserves creates a shell game, where the rarest and most unique forests, old-growth, are continually whittled away. The uncertainty about the reserves compounds the uncertainty about the ecosystem, leaving little confidence that the plan will in fact achieve its stated goals.

The plan provides inadequate retention of green trees, snags and logs in the matrix. Rotation ages of only 100 years would preclude establishment of high quality late-successional character over most of the landscape. This is worst in the coastal forests where weak forest plan standards would apply. (DSEIS 2-42)

The plan provides inadequate protection to several critical watersheds, since they were not included in the list of Key Watersheds. This denies several at risk stocks of anadromous fish the habitat protection needed for recovery.

The plan is does not assure funding, despite relying heavily on restoration, monitoring and further research to achieve the goals. In one instance the FEMAT *"... recommend[s] that there be a reduction in existing road mileage within Key Watersheds. If sufficient funding does not become available for this reduction, we recommend that there should at least be no net increase in road mileage in Key Watersheds."* (FEMAT V-51) How can we build more roads when we can't afford to fix the problems we have? If we can't fix those problems, then how will the plan succeed?

Again, we must be conservative in our land and resource allocations if funds are not assured for the effective life of the plan, at least 200 years.

III. SIERRA CLUB PROPOSED CHANGES

While the President's plan is seriously flawed, there are changes that could provide reasonable levels of assurance of continued viability, based on our current understanding. It is clear that a substantial increase in the size and protection of the reserves is necessary to achieve a healthy sustainable ecosystem.

Past abuses of discretion will not disappear with a few well-meaning speeches from the cabinet. In many cases the proposed plan needs to add clarity, specificity, and certainty. We have suggested modifications to the President's plan that would address the deficiencies noted above. Additional details are provided in supplemental letters from our chapters in the northwest.

1. RESERVES

a. Establish No Logging Zones

True Ancient Forest (LS/OG) Reserves should have no cutting of natural forests. Essential to any ecosystem plan is the maintenance of large areas with all resources and processes operating naturally. While thinning and salvage may be appropriate in some areas, scientists admit that measures to accelerate late-successional characteristics are experimental (FEMAT IV-72). With many species at risk today, we can't afford to gamble with areas that are now intact.

The silvicultural guidelines proposed (FEMAT III-34 *et seq*) should not be applied in true reserves. They are more appropriate for managed reserves or the matrix. No logging in the riparian reserves must be re-emphasized here.

Besides the roadless areas (see 1.c), logging should be precluded in riparian and administrative reserves. Many additional areas such as the Bull Run Watershed (MTH), Icicle Creek (WEN), Suiattle River reserve (MBS) and Lewis River (GPT) should also be off limits to logging. Other categories of areas are noted later in these comments.

b. Restrict Thinning

Within Ancient Forest Reserves, thinning should be allowed only on stands less than 50 years old which had been previously logged. This would usually be a one time only entry in order to accelerate development of diverse, multi-storied forests. Cutting would not be allowed on trees that had reached 100 years of age.

Thinning should not be used to interfere with naturally maturing younger stands such as areas burned in this century. Examples include roadless areas: north Mt. Adams (GPT), Skagit Flanks (MBS), Green Mountain (OLY) and the Meadows (OKA). Neither should "restored"

clearcuts or "potential" habitat be considered a substitute for existing LS/OG habitat. It cannot replicate LS/OG conditions and *"...processes such as maturation of tree crowns, thickening of bark, and decay of tree boles are not readily accelerated through silviculture."* (FEMAT IV-30)

c. No Logging or Road Construction in Roadless Areas

Large contiguous areas of habitat provided by roadless areas are essential to the integrity of the ecosystem plan and will increase the probability of retaining all native species.

This is especially important for large ranging predators by providing habitat and reducing human contact. The FEMAT notes the need for remote lands for wolf & grizzly bear which are found in the North Cascades. *"Human-induced mortality is the major limiting factor..."* for wolves. (FEMAT IV-18) Grizzlies require *"vast, diverse and remote areas, away from human disturbance."* (FEMAT IV-18) Consequently, the roadless areas in the North Cascades are part of the proposed recovery plan. (FWS, 1992) Roads have a major impact on the recovery these species as well as activities of other species such as elk.

This provision would also protect special habitats such as serpentine soils that are frequently the refuge of endemic species (e.g, Kalmiopsis in Siskiyou NF). (See also 3c)

In addition, protection of roadless areas would significantly increase protection for watersheds and fisheries. It is inconceivable that we would allow further roading or logging in untouched areas when hundreds of millions of dollars are being spent to restore areas that have recently been roaded and logged. In most cases these roadless areas are roadless for a reason- they are frequently steep, high elevation and have unstable soils (FEMAT V-51) and/or have low value timber.

"Roadless area are often characterized by significant amounts of unstable land." For example, 69% of the roadless lands in north Wenatchee NF are unstable. In the Okanogan it is 54% and the Klamath 23-28%. (FEMAT V-51)

The risks are high as *"[t]imber harvest can increase the rate of mass movement several-fold. Road construction increases the rates of landsliding from 30-350 fold."* (FEMAT V-51)

"Management activities in roadless areas will increase the risk of aquatic and riparian habitat damage and potentially impair the capacity of Key Watersheds to function as intended and to contribute to achieving Aquatic Conservation Strategy Objectives." (FEMAT V-76)

Clearly, roadless areas provide multiple benefits and should be fully protected. Among the areas at risk in the preferred alternative are the following examples.

The Skagit Flanks roadless areas, adjacent to the Noisy-Diobsud Wilderness (MBS) and North Cascades National Park Complex contain important bald eagle habitat. It is the lowest forest on this national forest, (400'), but due to fires is dominated by mature and sub mature

stands. It is a critical connection to other reserved areas in the National Park and Cascade River. It also includes three salmon spawning streams, that are actually intermittent. Logging on the hillside will change the hydrology, putting coho and other stocks at risk.

The low elevation old-growth on the **White Chuck Bench** adjacent to the Glacier Peak Wilderness (Mt. Baker-Snoqualmie National Forest) was placed in the matrix. Despite its salmon spawning habitat, designation as a critical watershed, and recommendation as a scenic river (MBS Forest Plan) it would still be available for logging. Fragmentation of the "important" late successional forest (LSOG2) and further siltation of the water would occur with Alternative #9.

Several other roadless areas are found in proposed Adaptive Management Areas. In Washington, significant areas include the **Pressentin** and **Higgins Mountain**, and **Green River** (Mt. Baker-Snoqualmie); **Kachess Ridge**, **Teaway** (Wenatchee); **Blue Lake**, **Mt. Adams-Cispus** and **Pompey Peak** (Gifford Pinchot). Significant portions of these areas are already in reserved in the forests plans.

In Oregon the large roadless areas on the east side of the **Kalmiopsis** Wilderness were inexplicably left out of the reserves. These include portions of Indigo and Canyon Creeks. High endemism, important habitats, and sensitive watersheds are found here. Farther north, upper **Shasta Costa** Creek was also left open to logging.

The **Soda Mountain** Wilderness Proposal (BLM) was excluded, despite its critical value, at a crossroads of ecological diversity.

In California, an excellent example is the **Dillon Creek** roadless area (KLA) which provides habitat for summer steelhead among the low elevation forest.

Additional examples will be described in the supplementary letters from our local chapters.

These areas take on added significance, as the **proposed plan would eliminate all areas in the matrix specifically designated for old-growth species habitat retention** in current forest plans (FEMAT III-23).

No Salvage should be allowed in roadless areas (Prescription 1, FEMAT II-18). A prime example is the Cornpatch roadless area (**Warner Creek (WIL)**) in Oregon, which would be impacted by salvage operations currently contemplated by the Forest Service. The entirety of the roadless area should be included in the reserve and protected from salvage operations.

Roadless areas should be added to the Reserve designation for consistency and fullest protection.

This protection must apply to all roadless areas, as some were omitted from the SEIS (Map V-H-3). This must include all remaining RARE II as well as other qualifying lands not shown. Examples include lands in the **Snoqualmie**, **Tolt**, **Green** and **Cedar Rivers** (over 65,000 acres in MBS NF); plus areas overlooked in RARE II, such as **Lookout Mountain**

(OKA NF) and roadless lands adjacent to Crater Lake National Park and in the Kalmiopsis region). Due to their critical ecological value, checkerboard ownership should not be a criteria for this inventory.

In addition other roadless areas equal or greater than 1000 acres should be included in the inventory. This is consistent with the Scientific Societies' recommendation on forests east the Cascade crest. See comments submitted to the Team by Sierra Club, including maps, in May 1993.

Recent information "...indicates a high and increasing demand for recreation settings featuring low levels of development and management activity with relatively low levels of use, and where motorized access is not permitted." (FEMAT II-75) This is echoed by the Washington State Interagency Committee for Outdoor Recreation in their comments on the Mt. Baker Snoqualmie Forest Plan. There is an overlap of LS/OG species conservation objectives and roadless areas with these types of recreation. (II-76) Protection of these areas should be a high priority for the plan.

d. Permanent Protection

Natural forest cycles are centuries long, and thus require protective designation with the maximum level of permanence available. The pressure to manipulate natural systems is ever-present, but the effects of such activity can rarely be reversed. The existence of the Forest Service and even the United States is less than the lifespan of one Douglas fir. We suggest that the President sign an **executive order permanently establishing the entire reserve system.**

In the preferred alternative "...the fate of Administrative Reserves outside of Late-Successional and Riparian Reserves will be determined in the phase II planning effort- i.e., the continued status as Administrative Reserves is not certain." (FEMAT II-25)

Certainly, there should be a commitment to **retain all existing administrative reserves** (FEMAT II-25). Protection in current forest plans has been the basis for recent scientific reviews and proposals. Loss of them would undermine those viability assessments. Habitat for threatened and endangered species which may not be dependent on LS/OG forests is provided by these areas.

Deletion of these areas would also ignore the other resource values for which they were established. Significant recreational, scenic, geologic and historic resources could be at risk.

e. Acquisition of High Priority Habitat

Acquisition of private lands with undisturbed habitat in ecological gaps is essential. The highest priority should be given to **roadless areas with LS/OG in intermingled ownership.**

A prime example is the **I-90 corridor** in Washington. Over 40,000 acres of LS/OG forests are on land owned by Plum Creek Timber Company, from an original railroad land grant. Without preserving the remaining roadless forest areas, there will be a 25 mile swath of highly fragmented forest, in addition to freeways, farms and towns. This could be an insuperable barrier for many species, potentially producing isolated populations of several species in the North Cascades.

Acquisition would prevent the logging of late-successional forest on currently private lands. It would also avoid building access roads across unroaded national forest lands in reserves. In several cases this would undermine the key watershed provisions as well. An ounce of preservation is worth a pound of restoration!

"In these areas of special concern, contributions by nonfederal lands remain important to recovery of the species..." and should be addressed in the Final SEIS. (FEMAT II-32)

Another example is the **Headwaters forest** near the Six Rivers NF in California. Over 5,000 acres of virgin forest the redwood region is at risk. In addition, 40,000 acres of cutover land needs restoration. It is a link between the public land in the mountains and the coastal parks.

f. Minor Boundary Adjustments to Reserves

In addition to the lands noted above, small areas should be added to the reserves for better protection and management (e.g., isolated parcels surrounded by wilderness and reserve such as upper Lennox Creek or Miller River in Alpine Lakes Area). In many cases the financial and ecological cost of retaining these areas in the matrix with road access will far exceed any commodity value.

Similarly, small deletions should be made to remove areas of development that have no chance for restoration to late-successional forests. (e.g., Fort Lewis/McChord AFB- eliminate developed areas such as runways and barracks). The strategy relies on the entire reserve system, but the EIS indicates it is not binding on agencies other the FS and BLM. This needs to be changed. (see also V.6.)

2. WATERSHED CONSERVATION

Full measures to preserve and restore watersheds is essential to the plan. Fisheries are in serious trouble and the *"Loss and degradation of freshwater habitats are the most frequent factors responsible for the decline of anadromous salmonid stocks."* (FEMAT V-11)

Watershed conservation should focus on prevention of problems and better protection of adjacent lands, rather than artificial manipulation of the stream channel. This concept is reinforced by the recent scientific societies' report on eastside forests. For instance, *"Watershed restoration must be an integral part of a program to aid recovery of fish habitat, riparian habitat and water quality. The*

most important elements of a restoration program are: 1) control and prevent road-related runoff and sediment production; 2) improve the condition of riparian vegetation; and, 3) improve habitat structure in stream channels." (FEMAT V-76) The FEMAT goes on to say, *"In-stream restoration measures are inherently short term and must be accompanied by watershed-wide practices to achieve long-term restoration."* (FEMAT V-58) *"We stress that the most successful method of habitat restoration has been watershed protection."* (FEMAT V-J)

"For a majority of rivers, current maximum stream temperatures exceeded the warmest estimated naturally occurring temperatures or were in the upper portion of the range of natural conditions." (see fig. V-8 FEMAT V-16) However, no amount of channel work will mitigate for high water temperatures caused by clearcut riparian zones.

a. No new road construction in key watersheds

No further road construction should be allowed in key (tier 1,2) watersheds. At risk fish stocks require the highest level of protection. As stated in the FEMAT Report (V-16) *"Roads may have unavoidable effects on streams, no matter how well they are located, designed or maintained."*

While the FEMAT recommends *"...no new roads should be constructed in roadless areas within Key Watersheds."* (FEMAT II-40), the damage is so severe that it should be expanded. In addition to other constraints, **no net increase in road mileage should be allowed in other watersheds.**

b. Expand Road Removal Program

Numerous roads in Reserves in all watersheds should be removed and revegetated. Many are unneeded or damaging other resources. Initial efforts should concentrate on Tier 1 watersheds and lands adjacent to roadless areas. Since the agencies do not have sufficient funds to adequately maintain the current network, this investment is necessary to prevent future disasters.

"Road networks in many upland areas of the Pacific Northwest are the most important source of management-accelerated delivery of sediment to anadromous fish habitats." (FEMAT V-16) As noted by the Assessment Team, *"Of particular concern is... 110,000 miles of roads. Much of this network adversely affects water quality and peak flows."* FEMAT V-76

The plan should incorporate our **Roads to Trails Program**, as part of the watershed restoration plan. (See our letter to Regional Forester, John Lowe, April 8, 1993.) It provides long term water quality, recreation and wildlife benefits, as well as skilled work in the near term.

On just the Darrington Ranger District (Mt. Baker-Snoqualmie National Forest), we have identified over 200 miles of roads that could be converted to trails.

c. Incorporate full SAT Riparian Standards

The riparian buffers on intermittent streams should be widened to the full Scientific Advisory Team recommendation (Prescription 1). Full viability of salmon stocks depends on implementing this standard. It would increase the likelihood of well distributed populations to 80% (FEMAT V-72).

According to the FEMAT (V-70) this would be especially important in the in coastal provinces (i.e., Six Rivers, Siuslaw, Siskiyou, and Olympic NFs, and Salem, Eugene, Coos Bay BLM Districts) due to "...a large number of at-risk anadromous salmonid stocks" and "...large areas of unstable land".

Further, "...intermittent streams are extremely important habitat for bryophytes, and adequate buffers should be extended to these areas in all watersheds." (FEMAT IV-108)

"Bryophytes should receive considerable protection under riparian prescriptions, especially those with full SAT riparian buffers. However, protection for some bryophytes should be extended to encompass the entire floodplain because considerable species diversity exists on stream terraces that may extend beyond one or two tree lengths. Large areas in the floodplains have been lost to roads. Some of these roads should be removed from the stream terraces." (FEMAT IV-109)

d. Expand Riparian Reserves for Wild & Scenic Rivers

The full width of the corridor of the existing and proposed (forest plans) units of the National Wild and Scenic River System should be added to the riparian reserves. This quarter mile wide strip on either side of the rivers was recommended by the Portland Panel of Scientists (1991), as well as an eighth mile wide buffer on other large streams. These should also be considered in the final riparian reserve boundaries.

These rivers provide significant benefits when fully intact, that are not provided by smaller, higher elevation streams. They are frequently low elevation, larger streams, that provide important habitat and corridors for aquatic and terrestrial species. There would be considerable overlap with the floodplain provisions of Riparian Strategy #1.

3. OTHER FEDERAL LANDS

a. **Revise Adaptive Management Areas**

Establishment of Adaptive Management Areas should be delayed until the goals and public participation processes are more clearly defined. As noted above, roadless areas should be deleted from adaptive management areas.

In any event, neither NEPA nor NFMA should be circumvented. Proper adherence to the provisions of these laws will provide assurance that resources are properly managed, the public is involved, while providing flexibility to incorporate new information. Agencies must not use NEPA as a barrier to good decisions, but rather employ it as an excellent decision-making process. Experiments will take decades, providing time for thoughtful review and compliance with the laws.

With high costs and uncertain objectives, **no more than one AMA per state** should be designated. We are involved with the **Applegate** experiment in Oregon, and suggest that it proceed as the first AMA. The **Olympic Peninsula** in Washington also has a multi-ownership experimental approach that could proceed. The **Hayfork** in California is also an experiment underway, though deleting the Six Rivers NF component should be considered. Other AMAs should be deleted from the proposal, transferring the late-successional forests and roadless areas to the Reserves.

While improvements on adjacent non-federal land is a worthy goal, the proposals offered give no assurance of improved management on these lands nor is public involvement assured. These must be a part of the AMA plan for any chance at success. Local input should be balanced with representation from regional and national interests in developing plans for any AMA.

b. **Reintroduce Fire in Drier Provinces**

Province level fire plans should be developed to reduce risk of catastrophic loss, while providing more natural fire adapted vegetation patterns. However, this is experimental and needs strict guidelines and careful monitoring. Certainly, protection of life and property will continue to be a paramount objective.

Within **roadless areas**, allow **only limited vegetative manipulation** to avoid catastrophic loss of LS/OG (e.g., cut, pile and burn small fuels and fuel ladders). No commercial timber sales, roads or ground vehicles should be allowed. Work in natural forest areas should be only in extreme instances. The vast majority of work required will be in previously managed areas.

Fire suppression guidelines for wet provinces should also be revised to ensure consistency with ecosystem goals. However, risk reduction activities are not needed. *"In Late-*

Successional Reserves in the Western Cascades and coastal areas of Oregon and Washington, manipulation of natural stands to reduce fire hazard is generally not necessary. However, fuel management may be desirable in plantations." (FEMAT IV-35)

c. Establish Special Habitat Areas

The FEMAT has recommended several types of areas that need special protection. Many of these could be so designated in the Final SEIS.

Designate Botanical Areas, Areas of Critical Environmental Concern (ACEC), Research Natural Areas (RNA) and special areas (e.g., mollusks, arthropods). No logging would be allowed. These areas should be added to the reserves where appropriate.

Specifically, "... bat colonies in caves and abandoned mines need to be identified and protected." "No timber management should occur within these buffer zones, and road access should be closed." (FEMAT IV-181)

"Sites that are known to support rare taxa [of fungi], high species diversity, unique areas, special habitats, communities or features should be identified and these sites protected by establishing special interest areas or mycological preserves. Buffers should be provided..." (FEMAT IV-87).

*For example, "...Potholes Areas of the Willamette National Forest at 5,000 feet..." should be identified as an area of biological diversity and designated as a mycological special interest area." (FEMAT IV-88) Also, *Oxyporus nobillissimus* is known from only 12 localities. "All known locations should be protected and populations monitored." (FEMAT IV-88)*

"Protection of key populations of rare lichen species from adverse management activities and designation of Botanical Special Interest Areas or Areas of Critical Environmental Concern are important mitigation for these groups." (FEMAT IV-97)

Designate areas "...protecting mature trees on ridgelines and windswept sites, especially in the Columbia River Gorge." Others include: Sulphur Creek Lava Flow (MBS), Fishermen's Bend (BLM), and Sutton Creek (SIU). (FEMAT IV-98)

For vascular plants *"...several important areas of high diversity are recognized that feature plants restricted to narrow geographic areas. The Klamath Province, the Columbia River Gorge, and the Olympic and Wenatchee Mountains are among the areas with high endemism. Several rare species are restricted to the coastal redwood forest." (FEMAT IV-111)*

"Establishment of special Reserves (e.g., Botanical Special Interest Areas and Areas of Critical Environmental Concern) on federal lands to protect habitat and key populations of [plant] species at risk will be necessary." (FEMAT IV-123) "At least 12 species closely associated with old-growth typically occur below 3000 feet in elevation, yet low elevation old

growth is particularly limited." (FEMAT IV-122)

"At least 200 additional species occur within special habitats such as serpentine barrens, bogs, and wetlands..." (FEMAT IV-112) and these must also be designated for special protection.

"When located, populations of mollusk species at risk should be protected with buffers that are at least one site potential tree height in width." FEMAT IV-136

The FEMAT notes high endemism of mollusks in the following areas:

- S half of W Washington Cascades
- Olympic Mountains
- NW Oregon Coast range
- Columbia Gorge, River and tributaries & lower Columbia River (below Dalles to mouth)
- Shasta river Canyon
- Salmon, Trinity and Marble Mtns, CA
- Mt. Shasta vicinity
- Rogue and Umpqua River systems
- Upper Klamath Lake
- Lower and middle stretches of Klamath River and tributaries (e.g., Trinity & Smith Rivers)
- Upper Sacramento River

(FEMAT IV-136)

Additional reserves, special areas and riparian protections are needed in these areas.

d. Improved Habitat Protection in Matrix

No logging of groves meeting old-growth definitions should be allowed. These are rare and non-renewable refugia and *"...blocks as small as 50-80 acres begin to offer some significant area with interior forest conditions."* (FEMAT IV-186) All blocks of late successional forest that are 50 acres or larger should be mapped immediately to avoid inadvertent entry. Smaller blocks of LS/OG should receive extensive studies of distribution of amphibians, invertebrates, lichens, fungi on a site specific basis prior to any management activities to insure protection of old-growth and significant other LS/OG groves.

"Even small fragments of old-growth forests within the Matrix are important for fungi, because of their limited dispersal capabilities." This will *"...provide biological legacies..."* and *"refugia"* FEMAT IV-85 as well as inoculum for adjacent second growth stands, including managed stands. *"Species that are present in young stands, may also occur in mature to old-growth forests, but a large number of species occur exclusively in older stands."*

"Small patches (10-40 acres) of old-growth forests distributed across the landscape are important as refugia and centers of dispersal. Some lichens, particularly the nitrogen-fixing species, do not become established until stands are several hundred years old." (FEMAT IV-97)

For fungi, *"Patches should be large enough (5-10 acres at a minimum)..." "In the Coast Range of Oregon and the coastal Olympics, remaining old-growth stands are especially important because they are rare across the landscape, particularly in the Sitka Spruce Zone. Old growth stands are also scarce at lower elevations."* (FEMAT IV-86)

Other special habitats need protection on a site specific basis. *"For bryophytes that occur on shaded rock outcrops with thin soil, the base of rock outcrops could be buffered by retaining protective clumps of green trees (two or three tree lengths) around each rock outcrop."* (FEMAT IV-109)

Port Orford Cedar is threatened by root disease spread by management activities. *"Therefore, it is critical for the conservation of this species to close roads and restrict further road construction in watersheds that contain uninfected stands (e.g., inland California population)."* (FEMAT IV-123) This should mandate protection for roadless areas with this species present.

The Option 1 prescription for **snags, logs, and green tree retention (2:2:6)** should be the standard for all forests west of the crest of the Cascades. This should also apply to the westside forest types on "eastside" forests such as the Wenatchee NF. Drier eastside forest types should be managed similarly, but with additional protection for species such as ponderosa pine.

Rotations should be extended to 150 to 180 years in areas where late-successional forests are deficient as noted in the Portland Panel report (1991).

BLM lands should be managed under same requirements as the National Forest lands. Modifications to account for the checkerboard ownership and heavy fragmentation should not provide for a lower standard of protection of the ecosystem. While selective cutting is proposed for part of the BLM lands, the prescription (FEMAT III-23) is inadequate. A healthy mature forest could easily have 4 times the number of large trees that would be left under proposed guidelines. Cutting of over 70% of the trees in a stand does not appear to be very "selective".

Since *"Intensive burning is detrimental to many species of late-successional fungi..."* (FEMAT IV-85) burning for site preparation should be eliminated.

e. Miscellaneous Provisions

Slope is a major determinant of stability and soils are non-renewable in the time scale of this plan. Thus, **interim limits on slopes** where ground disturbing activities may take place

should be established immediately to avoid further degradation of watersheds. The watershed analyses could then modify these as appropriate. Slopes exceeding ninety percent should be removed from the timber base.

"Mollusks should be included in the watershed analysis for Riparian Reserves." (FEMAT IV-135) This should be expanded to other aquatic and riparian species.

Other measures are needed to insure viable populations and *"...we recommend closure of all federal lands to kill-trapping of martens (under all options) until the incidental take of fishers is determined to be insignificant."* (FEMAT IV-175)

4. NON-FEDERAL LANDS

Improvement of forest management on non-federal lands is essential to the survival of many species. Greater emphasis and clarity on efforts outside federal lands should be incorporated in the final plan.

While there are actions that must be taken on non-federal lands, this plan must not assume that these actions will occur, it must independently provide for the safety of the ecosystems that exist on federal lands. The Federal Government is obligated to avoid actions that will lead to the endangerment of species, and must make conservative estimates in regard to the contribution of other land managers. It can only modify its plan when the non-federal actions have taken place and are assured of permanence.

Improved management of these non-federal lands is critical as *"...some species are influenced so strongly by habitat on nonfederal lands or other conditions (e.g., air pollution) that their continued persistence is in question regardless of federal land management."* (FEMAT II-30)

a. Recovery Plans Strengthened on Non-federal Lands

Recovery plans for northern spotted owl and marbled murrelet must be strengthened on non-federal lands to complement efforts on federal lands. This especially important in gaps such as I-90 with high percentage of non-federal lands. Dispersal habitat must include mature forests (> 80 years), not just the 60 year rotations common on industrial forest lands.

Insist on **retention of late-successional forest** as part of Habitat Conservation Plans (HCP) under Section 4d rules of the ESA. The initial HCP for Murray Pacific provides almost no LS/OG and minimal dispersal habitat capability in exchange for eliminating any chance for future reproductive activity for the spotted owl.

b. Strengthened State Forest Practices

"Current state forest practice rules do not adequately protect ecological effectiveness nor provide any margin for error to accommodate natural disturbances or uncertainties in

knowledge." "If measures are not taken on to improve management on state and private lands, options for federal land management may become more limited." (FEMAT V-61)

Thus, the president should encourage states to strengthen their forest practices laws and regulations. Explicit evaluation of those measures should be included in the assessment of the alternatives in the FSEIS.

c. Establish LS/OG Reserves on State Lands

To improve ecological viability the FEMAT suggested "...management for late-successional/old-growth ecosystems or components of late-successional/old-growth ecosystems on state and private lands in provinces where federal lands occupy a small percentage of the land base, such as the California and Oregon Coast Range Provinces and areas where private and federal lands are interspersed in a checkerboard pattern of alternating sections. State lands in the western Washington Lowlands and northern Oregon Coast Range offer significant opportunities to fill gaps in the regional late-successional ecosystem." (FEMAT IV-76)

In some cases the states have established reserves that protect LS/OG forest (e.g. state parks or natural areas). Additions to these reserves are necessary to ensure full ecosystem viability. The plan should explicitly encourage such actions by the states and incorporate them into the federal plan where appropriate.

5. ECONOMIC ISSUES

a. Community Assistance

We support an economic package that will promote a **more diverse and resilient economy in rural areas** affected by the forest plan. This should include assistance to families and communities during the transition. Redirecting logs to domestic manufacturers that are currently exported should be an element of this plan. Diversifying local economies should be a major goal.

Watershed restoration is an obvious choice for federal job creation. Road conversions would provide skilled work while improving local water quality and fisheries.

However, the funding package must be increased to accomplish these goals.

b. Log Export Limitations

A **tax on all raw log exports**, with 100,000 BF annual exemption per land owner should be initiated by the federal and state governments. Legislation would encourage domestic manufacture, and make domestic products more competitive against raw logs in Asian

markets. The exemption would provide small woodlot owners some relief and discourage quick liquidation to avoid the tax.

Eliminate substitution by further tightening of loopholes that still allow companies that export to outbid local independent sawmills.

c. Reduced Consumption

Reducing wood fiber consumption and increasing recycling are important components of a comprehensive forest strategy. Increased efforts in this arena should parallel the efforts oriented to land management.

6. AGENCY COORDINATION

a. Viability Plans for At-risk Species

Plans to ensure viability of rare, local and endemic species (listed in FEMAT), prior to ESA listing should be prepared. Additional studies should be initiated immediately and interim guidelines issued. Agencies must list species in a timely manner when warranted.

b. Transfer BLM Forestlands to National Forests

Improvements in coordination and efficiency will be accomplished by consolidating management in one agency where LS/OG lands are adjacent. To insure consistency and compliance with all wildlife laws the O&C lands should come under the provisions of NFMA.

All BLM lands in **western Oregon** should be transferred to the Forest Service, incorporating these lands into existing national forests. The ultimate formula for county receipts derived from O&C lands should be determined in the legislative process. Similarly, transfer lands in **northeast Washington** (Chelan, Okanogan, Stevens, Ferry and Pend Oreille Counties) to appropriate national forests. BLM lands in **coastal California** should also be transferred to Forest Service jurisdiction.

IV. OTHER ALTERNATIVES

Clearly, Alternatives 7 and 8 are patently illegal, failing to recover endangered species, and failing to meet basic viability tests for a host of plant and animal species. Alternatives 2,3,4,5,6 and 10 all suffer from fatal flaws that prevent them from achieving legislated mandates and ecosystem viability. Alternative 1 comes closest, but needs to be improved. The suggestions made above could be added to Alternative 1 to correct these problems.

V. DOCUMENT

The draft SEIS is deficient in several instances, which need to be corrected in the final.

1. Alternatives Considered

The DSEIS did not evaluate a full range of options. Additional reasonable alternatives could be selected from the existing options "considered" (Table III-1, FEMAT III-2).

The following alternatives should be added to the detailed assessment:

- a. **No cutting on federal lands** (Option 48 on Table III-1, FEMAT). It rated high on all five criteria. (Only others where all five rated high were LS/OG Panel 12C and 14A,B,C.)
- b. **Alternative 1 plus:**
 - all roadless areas off limits to logging and roadbuilding
 - thinning only previously managed stands where trees are < 50 years
- c. **Revised Alternative #9** as modified with changes noted in previous pages.

If the above revisions are not made to Alternative #9, we request that such a revised option be analyzed separately and fully in the Final SEIS.

2. Alternatives: Description and Evaluation

It was extremely difficult to evaluate the full effect of the options as the standards, guidelines and other provisions were scattered about the DSEIS, FEMAT and other referenced materials. The Final SEIS should **incorporate all relevant provisions and prescriptions in one place** in the document. Any modifications to previously published materials should be presented exactly as proposed in the preferred alternative.

It was difficult to compare Alternatives 2, 6, and 10 due to limited analysis as they were not displayed on many of the charts. Additional analysis should be included in the FSEIS.

3. Cumulative Effects

The conclusions regarding cumulative effects are contradictory. FEMAT says effects will be essentially the same on all options, but in other places says effects will change depending on outside management (EIS 4-3)

The viability of each option could change with varying levels of protection on non-federal lands-based on Recovery Plans and 4d rules (HCPs). The preferred option must institute certain mitigation on nonfederal lands or assume worst case scenario.

4. Map Errors

Ownership patterns need to be updated (e.g., Icicle Creek, WEN NF).

Errors on all maps should be eliminated: federal ownership near Marblemount, MBS NF; Olympic NP on ownership map.

A reinventory of roadless areas should be prepared. Those not published in Forest Plans need to be added to the FSEIS. (see 1c)

Administrative Reserves in many forests are not accurate representations of the forest plan designations.

The AMAs in California need to be properly displayed on Option #9 (Errata sheet).

The FEMAT states, *"Some areas currently remaining unmapped would be managed as Late - Successional Reserves."* This includes LSOG3 and Marbled Murrelet sites. (FEMAT IV-32) Are the maps of Option 1 not accurate?

5. Map Resolution

The maps distributed with the DSEIS are useful only to give a general idea of the distribution of the various management areas. In order to adequately assess the proposed plans it is necessary to know exact boundaries.

The necessary information is not readily available. For example, one of our Groups is particularly interested in the Warner Creek area. The distributed maps can not be used to locate the reserve boundary. The Willamette National Forest Supervisor's office could not answer a question about the exact location of the boundary. The Oakridge District Office did eventually provide a verbal description of the location of the boundary, however a map was not offered. Considerable effort was required to obtain this informal, hearsay, information.

This is important as the validity of the plan is based on explicit management regimes applied to specific geographical areas. The pressure to set the boundaries exactly as the GIS printout shows, will be strong. There would be little chance for prudent adjustments, even to correct errors.

The **recommendations** made in these comments should be **easily accommodated with the current computerized mapping system (GIS)**. What is needed is a willingness to make those adjustments and providing the public with a reasonable method for providing such site specific recommendations.

6. Omissions

Several key items were omitted from the evaluation. This leaves the plan incomplete. It also indicates that a more conservative alternative needs to be selected to account for lack of information or analysis.

a. Plants

The SEIS does not rate special plant habitats despite 200 species affected included 54 listed as threatened or endangered (FEMAT IV-112) (e.g., wetlands; see also V-1). Although locations may be numerous, these critical resources must be evaluated in the FSEIS, nonetheless.

b. Wildlife

The **Lynx** was listed by SAT as associated with LSOG forests but not in the FEMAT (IV-171). Its connection to forested and roadless areas is clear. This species should be evaluated in the FSEIS. It is an important inhabitant of Okanogan NF (see below), and a significant part of the ecosystem under review.

c. Key Watersheds

A number of highly productive and sensitive river basins with large runs of native salmonids have not been included in the key watersheds. A prime example is the mainstem **Skagit River**. Rapidly declining populations of coho have forced early closure of fishing seasons. Other species are also at risk.

The American Fisheries Society also included additional streams in the **Illinois and lower Rogue River** basins (Oregon) as a watershed reserve. These should be added to the key watershed list in the FEMAT.

In California, the **South Fork Eel River** is an example of a critical watershed not noted in the FEMAT.

d. Fish

Several species of fish were excluded from the evaluation. Only salmonids were evaluated, (FEMAT V-67) and three species, **sockeye, chum and pink salmon**, were excluded, despite stocks at risk. While the land allocation and guidelines in this plan determine the effects from management of federal lands, other actions that will affect the non-federal lands have a dramatic affect on these salmonids as well. The viability of these species must be included in the FSEIS.

If insufficient information is available, then studies should be initiated immediately, and conservative interim guidelines promulgated.

7. Geographic Scope

The scope of the DSEIS failed to include the remainder of the Winthrop and Twisp Ranger Districts in the Okanogan NF. This is half the drainage of the **Chewuch River** which is a key watershed. It is ecologically a part of the North Cascades (rather than the Rocky Mountains) and is properly included in the Washington, Eastern Cascades physiographic province. Maps in the SAT report include this area as part of the range of the northern spotted owl.

Issues surrounding grizzly bears, lynx, and salmon are poorly resolved without inclusion of this area in this plan. It contains significant roadless lands that are in jeopardy of extensive logging without immediate action amending the forest plans. Unless a moratorium on this area is instituted until the Eastside study is done, it should be protected within the LSOG and riparian reserves.

As a plan that attempts to be ecologically based rather than an individual species, the artificial line drawn at the edge of the spotted owl range is inappropriate.

8. Jurisdiction

The DSEIS states it applies only to the US Forest Service and Bureau of Land Management lands within the range of the spotted owl. (DSEIS 1-2) However, the plan notes **reserves on Department of Defense lands**. If these are relied upon to achieve the goals of the strategy then affirmative statements from the Secretary of Defense needs to be included. Lacking that, the plan should not show such a designation, and the remainder of the plan strengthened to accommodate the deletion.

In the case of the Fort Lewis reserve (WA), additional forested lands between North Fort Lewis and the Nisqually Wildlife Refuge should be acquired. This would provide a more viable reserve with a solid connection between the Fort and Refuge.

9. Fisheries Related Employment

The analysis of fishing related jobs in the DSEIS (p4-121) should be revised to consider the positive impact of fisheries restoration. By relying on recent employment levels, the DSEIS understates the potential economic impact of the fishing industry, and understates the economic benefit of restoration efforts.

VI. RELATED ISSUES

1. Eastside Forests

The plan for "westside" forests should **not accelerate or otherwise increase logging on "eastside forests"**. The plan for those forests should proceed as rapidly as possible. Until that is finished the interim guidelines with the consequent reduction in cut levels should be implemented. The recent study by seven scientific societies should be incorporated into those guidelines.

2. Environmental Laws

The president's commitment to **maintaining all environmental laws** is paramount. Ignoring these laws has brought us the problem. No circumvention of the law will fix it. Legislated sufficiency language will be counterproductive, further inflaming the issue, rather than bringing resolution.

3. Funding

Adequate **plans and funding for monitoring and mitigation** must precede any management activities. The FEMAT stresses that this is essential for successful implementation of the plan.

For more information, contact:

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Northwest Indian Fisheries Commission

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October 28, 1993

Interagency Supplemental Environmental Impact Statement Team (SEIS)
P.O. Box 3623
Portland, Oregon 97208-3623

re: NWIFC Comments on the on Management of Habitat for Late Successional and Old-Growth Forest Related Species within the Range of the Norther Spotted Owl (DSEIS)

Dear Interagency SEIS Team:

On behalf of the Northwest Indian Fisheries Commission (NWIFC), I would like to provide comments on the Draft Supplemental Environmental Impact Statement on Management of Habitat for Late Successional and Old-Growth Forest Related Species within the Range of the Norther Spotted Owl (DSEIS). Please accept these comments as supplemental to any of the NWIFC member tribes' response to the DSEIS.

The Northwest Indian Fisheries Commission was created under the sovereign powers of its nineteen federally recognized Indian tribes party to United States v. Washington. Each of these tribes have treaty reserved rights to fish, hunt, and gather plants in their usual and accustomed areas, including areas within the range of the northern spotted owl, and are directly affected by the proposed action.

ISSUES

- 11: INCONSISTENT WITH ITS TRUST RESPONSIBILITY, THE PROCESS ADOPTED BY THE FEDERAL GOVERNMENT TO DEVELOP ITS PROPOSED DSEIS FAILED TO PROVIDE A MEANINGFUL OPPORTUNITY TO INVOLVE TRIBAL GOVERNMENTS.**
- 12: THE PROPOSED DSEIS DOES NOT ADEQUATELY PROTECT THE TREATY-RESERVED RIGHTS AND RESOURCES OF FEDERALLY RECOGNIZED INDIAN TRIBES.**

NWIFC COMMENTS
DSEIS

- I3: THE PROPOSED DSEIS DID NOT IDENTIFY AND PROVIDE FOR A COMPLETE EVALUATION OF POTENTIAL IMPACTS TO TRIBAL COMMUNITIES, ECONOMIES, AND CULTURE UNDER EACH OF THE ALTERNATIVES.**

DISCUSSION

- I1: INCONSISTENT WITH ITS TRUST RESPONSIBILITY, THE PROCESS ADOPTED BY THE FEDERAL GOVERNMENT TO DEVELOP ITS PROPOSED DSEIS FAILED TO PROVIDE A MEANINGFUL OPPORTUNITY TO INVOLVE TRIBAL GOVERNMENTS.**

The process adopted by the federal government did not provide for:

- (1) participation of each and every sovereign tribal government affected by the proposed action,
- (2) tribal participation which recognizes tribal self-determination and the government-to-government relationships Indian tribes enjoy with the United States, and
- (3) tribal input or consideration of their anadromous fish protection and rebuilding objectives in the identification of "key watersheds" or "Adaptive Management Areas."

Unfortunately, the lack of meaningful participation of the tribal governments in the process is reflected in the substantive concerns listed below that were not adequately addressed in the DSEIS.

- I2: THE PROPOSED DSEIS DOES NOT ADEQUATELY PROTECT THE TREATY-RESERVED RIGHTS AND RESOURCES OF FEDERALLY RECOGNIZED INDIAN TRIBES.**

The basis of this reasoning is:

- (1) the DSEIS did not specifically identify important resources, especially those recognized through treaty, that federal lands administered by the U.S. Department of Agriculture, Forest Service, and the Bureau of Land Management provide to Indian tribes,

- (2) the DSEIS did not specifically identify and evaluate the need to protect treaty-reserved rights as a basis for the draft plan. Even though the FEMAT report stated, "[t]reaty rights have been interpreted to have precedence over subsequent resource uses and must be accommodated by agencies." (See FEMAT report at II-73). Treaty-reserved rights are legal obligations constraining the "decision space" of the federal agencies,
- (3) options developed for the DSEIS were designed to meet the objective of, "maintenance and/or restoration of spawning and rearing habitat on [federal lands] to support recovery and maintenance of viable populations of anadromous fish species and stocks and other fish species and stocks considered 'sensitive' or 'at risk' by land management agencies, or listed under the Endangered Species Act. **At no point does the DSEIS discuss whether any of its options will be adequate to protect and restore the productive capacity of the habitat that will sustain populations to provide harvestable numbers of fish adequate to meet tribal needs as reserved by treaty in perpetuity.** To the contrary, the various options are only judged in terms of their likelihood of assuring the continued viability of anadromous fish and other fish over the next 100 years. The "viability" standard is inconsistent with treaty rights in that it does not provide for sustained harvest. In addition, the treaty right is not limited to 100 years but is a right in perpetuity to the tribes.
- (4) the DSEIS objective for Riparian Reserves is "maintenance and/or restoration of spawning and rearing habitat on [federal lands] to support recovery and maintenance of:
 - (a) viable populations of anadromous fish species and stocks and
 - (b) other fish species and stocks considered 'sensitive' or 'at risk' by land management agencies, or listed under the Endangered Species Act.

However, the definition used for "key watersheds" is limited to only subsection (b) above and does not include:

- (a) spawning and rearing habitat of anadromous fish as identified in subsection (a) above,
- (b) spawning and rearing habitat that provides and support fish for the exercise of tribal treaty rights.

- (5) the DSEIS fails to incorporate all known depressed stocks that are "at-risk" that were identified in the Salmon and Steelhead Stock Inventory (SASSI). For example, the Lower Skagit River mainstem and tributaries are known to have depressed fall chinook stocks, Skagit River coho are depressed, and Baker River sockeye are listed as critical, yet the Baker River tributaries, and middle and lower Skagit and its tributaries were not designated key watersheds,
- (6) fish habitat protection measures that provide a 60-70% chance of long-term viability of sensitive fish stocks is inconsistent with the tribes' treaty-reserved rights to harvest fish in perpetuity,
- (7) the federal government's effort to develop a scientifically sound, ecologically credible, and legally responsible forest plan cannot be considered complete until there is a complete evaluation of the plan's potential to impair or restrict the treaty-reserved rights of Indian tribes, which includes the right to manage reservation lands and resources in accordance with tribal objectives, and the right to carry out activities and utilize resources off-reservation pursuant to provisions set forth by treaty,
- (8) the DSEIS did not identify the impact and protection measures necessary for the protection of treaty reserved resources on non-federal lands. The FEMAT report acknowledges that "[c]urrent state forest practice rules do not adequately protect ecological effectiveness nor provide any margin for error to accommodate natural disturbances or uncertainties in knowledge,"
- (9) the determination of "key watersheds" for protection of fish resources does not include a criteria of treaty-reserved resources,
- (10) the DSEIS makes numerous references that tribal lands are important for the recovery of the northern spotted owl (NSO) and protection of other species. It is completely inappropriate to use reservation lands as a means of mitigating for the impacts of management on other lands. To do so is inconsistent with treaty-reserved rights of Indian tribes and the trust responsibility of the federal government, and
- (11) decision-makers will not be able to make consistent and principled decisions regarding protection of fish habitat in the implementation of "Watershed Analysis" because it is vague in defining measurable standards, objectives, or thresholds. Watershed analysis is an information gathering and organizing process. It does not make the policy decisions regarding what level of degradation or risk is permissible and what level of recovery is essential.

I3: THE PROPOSED DSEIS DID NOT IDENTIFY AND PROVIDE FOR A COMPLETE EVALUATION OF POTENTIAL IMPACTS TO TRIBAL COMMUNITIES, ECONOMIES, AND CULTURE UNDER EACH OF THE ALTERNATIVES.

The basis of this reasoning is:

- (1) the DSEIS asserts that "a *preliminary* review of the particular relationships among the alternatives regarding Native American lands, rights, and uses was undertaken." See DSEIS at 3,4-131. However, the results of this review are neither discussed nor disclosed anywhere in the DSEIS,
- (2) the DSEIS's analysis of impacts did not acknowledge the existence, powers, and responsibilities of tribal governments nor did it recognize that Indian reservations are culturally distinct within the region and that the tribes' different public finances methods might hinder their ability to mitigate the impacts of implementation of the various options. However, the DSEIS did devote considerably more attention to the workings of funding non-Indian local governments discriminating against the impacts to tribal governments,
- (3) the DSEIS are devoid of any discussion regarding the impacts of the various options on Indian reservations or tribal employment. The NWIFC and Tulalip Tribes presented the SEIS Team with economic data that would assist them in their evaluation of impacts to tribal communities ("Effects of OCS Oil and Gas Exploration and Development on Pacific NW Indian Tribes: Final Technical Report, US Dept. of Interior, Mineral Management Service, Pacific OCS Region, OCS Study MMS 91-0056, August 1991); however, the SEIS Team did not include this information in their analysis. In contrast, extensive attention is devoted to the impacts of the various options on non-Indian communities and non-Indian employment,
- (4) the DSEIS discussion on commercial fisheries does not include tribal commercial fisheries on the coast, Puget Sound, or Columbia River. No mention is made of tribal fisheries, commercial, ceremonial, or subsistence, that have been closed or constrained as a result of degradation of the resources,
- (5) the DSEIS erroneously states there are fewer than 500 fishermen directly employed in salmon fishing on the west coast. The citation of 500 fishermen does not include Puget Sound or Columbia River based fisheries. There are over 3500 tribal fishers in Puget Sound and the Straits alone. There are over 2000 different tribal fishing vessels for Puget Sound and the coast,

- (6) the FEMAT concedes there was a significant "balancing" process involved in designing viability options for sensitive and at-risk stocks. "[I]t is a question of balance between the fate of plant and animal populations, social desires, economic ramifications, and other factors of managing public lands." See FEMAT Report at II-102. Unfortunately, had the federal government performed a reasonable and adequate analysis of the effects of the various options on Indian tribes and also considered their treaty-reserved rights, it would have realized that rebuilding the fish runs as soon as possible is of enormous benefit to both Indian and non-Indian communities, and
- (7) the federal government has a trust obligation to investigate and consider impacts upon a potentially affected Indian tribes. To conclude that the Secretary's obligations are any less than this would be to render the trust responsibility a pro forma concept absolutely lacking in substance.

RECOMMENDATIONS

We offer the following recommendations to ensure the federal trust responsibility to Indian tribes is upheld. The Final SEIS (FSEIS) should:

- ▶ Unequivocally recognize the sovereignty of Indian tribes,
- ▶ Specifically address the unique status of Indian lands and off-reservation reserved rights held in trust by the United States (See Appendix A for proposed language to include in the FSEIS),
- ▶ Recognize the conservation requirements for the protection of treaty-reserved rights and resources as stated by numerous federal court decisions (See Appendix A),
- ▶ Acknowledge the duty the federal government has pursuant to treaty and under its trust responsibility for the protection and restoration of anadromous fish and their associated habitats (See Appendix B),
 - The FSEIS should include both doubling the size of buffers along intermittent streams and remove key watersheds from the scheduled timber base to increase long-term viability of sensitive fish stocks increase to 80%,
 - The FSEIS should clearly state there will be no road construction in roadless areas. The DSEIS concedes that many remaining roadless

areas contain substantial amounts of unstable slopes. Recognizing the past impacts caused by road construction, even under modern standards, it is essential to protect what little good fish habitat remains,

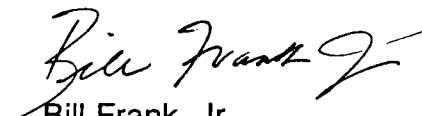
- ▶ Provide protection and restoration of fish habitat to its **optimum level** that provides for harvestable populations adequate to meet tribal needs in perpetuity pursuant to provisions set forth by treaty (See, Appendix A and B),
- ▶ Include: (1) current and potential anadromous spawning and rearing habitat, and (2) "treaty-reserved" and "usual and accustomed fishing grounds" as a criteria for the determination of "tier 1 key watersheds,"
- ▶ Please review the Salmon and Steelhead Stock Inventory (SASSI), that was developed cooperatively between the tribes and state departments of fisheries and wildlife, to ensure all depressed and critical ("sensitive" and "at-risk") stocks are utilized to identify "key watersheds,"
- ▶ Clearly state that prescriptions identified in "Watershed Analysis" will be additive to Riparian Reserves identified in the Aquatic Conservation Strategy. Prescriptions identified through watershed analysis will not have the potential to impact fish and wildlife habitat and will be utilized only when there is a benefit to the fish and wildlife resources (antidegradation policy),
- ▶ Develop a landscape approach for terrestrial resource protection that will be integrated into "Watershed Analysis." The landscape approach should also have clearly stated goals, objectives, and thresholds to guide management decisions (See Appendix C),
- ▶ Provide clearly defined default standards, objectives, and thresholds for the protection and recovery of fish habitat to be implemented "Watershed Analysis" (See Washington State Watershed Analysis Manual, Ver 2.0 E),
- ▶ Clearly state the federal government will fulfill its trust responsibility and not allow action in Adaptive Management Areas which would degrade fish habitat or adversely affect other tribal interests,
- ▶ Delete all references that tribal lands are necessary or should be used for conservation of a species and as a means of mitigating for the impacts of past, present, and future management of state, private, and federal lands (See Appendix A),
- ▶ Identify and list resources of importance to Indian tribes and include a complete evaluation of the environmental consequences to them under each of the

alternatives,

- ▶ Identify and provide a complete evaluation of the economic and cultural consequences to Indian tribes under each of the alternatives,
- ▶ Identify tribal communities as "most-at-risk" in the economic and social impact analysis, and
- ▶ Clearly state that all restoration activities will be closely coordinated and in cooperation with the affected Indian tribes (See Appendix D for map of reservations and treaty ceded areas). The FSEIS must recognize, at a minimum, the federal government has a trust obligation as derived by each of the treaties established in Washington state. Federal resources should be distributed consistent with each of treaty ceded areas and the basins of priority to each of the treaty tribes.

Thank you for the opportunity to provide comments on the on Management of Habitat for Late Successional and Old-Growth Forest Related Species within the Range of the Norther Spotted Owl(DSEIS). I would appreciate it if you would reply with specificity how the FSEIS will address our specific recommendations. Any specific questions regarding these comments, and the resolution of concerns raised herein, should be addressed to Mr. James R. Anderson, Executive Director, NWIFC.

Sincerely,


Bill Frank, Jr.
Chairman

cc: All Tribes
Terry Williams and Doreen Maloney, Tribal Environmental Policy Committee
The Honorable William Clinton, President
The Honorable Albert Gore, Vice-President
Washington State House and Senate Delegation
The Honorable Bruce Babbitt, Secretary, Dept. of Interior
The Honorable Mike Espy, Secretary, Dept. of Agriculture
The Honorable Ron Brown, Secretary, Dept. of Commerce
Carol M. Browner, Administrator, EPA
Marshall Cutsforth, BIA, Office of Trust Responsibility
George Smith, Ron Eggers, BIA, Portland

NWIFC COMMENTS
DSEIS

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Don Peasley, Intertribal Timber Council
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Gerald Emison, Acting Regional Administrator, EPA, Region X, Seattle
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Tribal Attorneys

APPENDIX A

TRUST RESPONSIBILITY

Many of the agencies involved in the process to implement the proposed forest plan are not adequately aware of the nature of reserved tribal rights to manage and utilize resources. This lack of understanding creates the potential for conflict between resource conservation to promote the general public welfare and the inherent sovereignty of tribal governments, tribal management of reservation lands and resources, and federally-protected tribal rights to take and utilize fish, wildlife, and plant resources.

Indian reservation lands are set aside for the use and benefit of Indian people pursuant to treaties, statutes, and executive orders. Typically, reservations were established for exclusive Indian use in exchange for cession of much larger aboriginal territories to permit peaceful non-Indian settlement and development. The right to exclusive use includes the right of tribal governments to control and manage reservation lands and resources. In addition, through treaties, the tribes of Puget Sound, the Washington coast, and the Columbia River reserved to themselves rights to take fish, hunt game, and gather off their reservations. Numerous court decisions over the past 90 years have affirmed that these treaty-reserved rights are part of the supreme law of the land.

Many treaty-protected resources that once abounded throughout the Pacific northwest have been severely reduced. In the case of salmon and other species, mismanagement by federal and state authorities have so depleted certain species that they have been listed under the Endangered Species Act. Attempts have been made to impose severe restrictions on treaty-protected tribal activities to compensate for impacts to resources caused by federal, state, and private mismanagement.

Discriminatory practices that do not provide for adequate protection of anadromous fish runs is unfair to Indian people and a violation of the treaty reserved rights and trust responsibility of the United States. Before asking tribes to shoulder the conservation burden left by the wayside by federal, state and private land management, the federal government must first ensure that the reserved rights of tribes are fulfilled.

Recognition of the trust obligation must not depend upon constant tribal oversight. Federal agencies must understand and support tribal sovereignty and Indian protected rights as an integral part of the trust responsibility of the United States.

The following policy guidance is to assist the agencies in ensuring that their actions are consistent with the trust responsibility of the United States to tribal governments.

NWIFC COMMENTS
DSEIS

**POLICY FOR DEVELOPMENT AND IMPLEMENTATION OF THE
FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
REGARDING THE GOVERNMENT-TO-GOVERNMENT
RELATIONSHIPS WITH INDIAN TRIBES**

The Federal government is obligated to ensure that the management plan is consistent with all treaty-reserved rights of Indian tribes. These rights include: (a) rights to manage reservation lands and resources in accordance with objectives determined by their tribal governments; (b) rights to take fish, both on and off their reservations, for commercial, ceremonial, and subsistence purposes; (c) rights to hunt, gather, and utilize resources on all open and unclaimed lands; and (d) rights to enjoy a government-to-government relationship with the United States.

The Federal government has an affirmative obligation to fulfill the rights of Indian tribes secured by treaties with the United States. This duty extends beyond the need to ensure the viability of species as required by federal laws (including, but limited to the Endangered Species Act, Federal Land Policy and management Act, and the National Forest Management act) to the obligation to provide a harvest adequate to meet tribal needs.

Government agencies have no right to impair or restrict these rights without explicit approval by Congress absent tribal consent. Where conservation of a species is at issue, communication with respect to potential tribal contributions are to be conducted on a government-to-government basis. Before a federal agency may take unilateral action that affects the rights or lands reserved by Indian tribes, the following conditions must be satisfied:

1. Proposed measures must be reasonable and necessary for preservation of the species at issue;
2. The conservation purpose of the measures cannot be achieved solely by regulation of non-Indian activities;
3. The proposed measures are the least restrictive available to achieve the required conservation purpose;
4. The measures do not discriminate against Indian activities whether as stated or applied; and
5. Voluntary tribal actions are not adequate to achieve the necessary conservation purpose.

APPENDIX B

TRIBAL RIGHTS TO PROTECT HABITAT

Federal and state governments have a duty to protect habitat for treaty-reserved resources of Indian tribes. This duty is independent of any other federal, state or other regulatory source and has been recognized in numerous judicial proceedings.

BACKGROUND

Twenty one (21) Indian Tribes in Washington have adjudicated treaty rights to take fish in all waters within their usual and accustomed grounds and stations. Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n., 443 U.W. 658 (1790) (Fishing Vessel); United States v. Washington, 384 F.Supp. 312 (W.D.Wash. 1974) (the "Boldt" decision), aff'd 520 F.2d 676 (9th Circ. 1975), cert. denied, 423 U.S. 1086, 96 S. Ct. 877, 47 L.Ed.2d 97 (1976). The tribes' right to take fish is a property right that cannot be infringed by federal, state, local or other interests. Menominee Tribe v. United States, 391 U.S. 404, 413, 88 S.Ct. 1705, 20 L.Ed.2d 697 (1968). The tribes' right to take fish can be abrogated only by an express act of Congress, and only with payment of just compensation under the 5th Amendment. Whitefoot v. United States, 293 F.2d 658 (Ct.Cl. 1961) cert. denied, 369 U.S. 818, 82 S.Ct. 629, 7 L.Ed.2d 784 (1962); Muckleshoot v. Hall, 698 F.Supp. 1504 (W.D.Wash. 1988). As a property right, the right to take fish is also protected by common law remedies available to any property right, such as damages and trespass. County of Oneida, New York, v. Oneida Indians Nation of New York State, 470 U.S. 226, 105 S.Ct. 1245, 84 L.Ed.2d 169 (1985).

The most direct application of these treaty rights is that the state and its non-Indian citizens have been prohibited from harvesting fish to the extent that doing so would deprive tribes of their share. Fishing Vessel, supra, and United States v. Washington, supra. Alterations or destruction of habitat needed by fish are not necessarily as direct a deprivation of the tribes' rights to take fish as the harvest of fish by non-Indians. However, many courts have recognized that the right to fish must include the right to protect the supply of fish against habitat destruction for the right to retain its meaning. Indian tribes with treaty fishing rights therefore argue that the federal government or state may not permit its subdivisions, agencies or citizens to take actions that effectively reduce or destroy the tribes' fishing rights by reducing or destroying the fish that are the subject of that right. Tribes have also asserted that damages are a remedy for loss of fish through destruction of habitat.

SUMMARY OF CASES

Most frequently these issues are resolved short of litigation. Cases where such issues (or closely analogous issues) have been litigated to a reported decision include:

1. **United States v. Washington (Phase II)**, 506 F.Supp. 187 (W.D.Wash. 1980), **vacated in part, aff'd in part**, 759 F.2d 1353 (9th Cir. 1985) (**en banc**).

The most significant case to address this issue is commonly known as Phase II of United States v. Washington.

In Phase II the 21 plaintiff tribes in United States v. Washington asked the federal court for a declaratory judgment that their treaty right to take fish included the right to preserve fish by protecting the habitat necessary for fish survival. The district court, in an opinion by Judge William Orrick, held that such a declaration was warranted because without the ability to protect fish habitat, the tribes' fishing rights could be rendered worthless. Judge Orrick held:

...implicitly incorporated in the treaties' fishing clause is the right to have the fishery habitat protected from man-made despoliation. ***The most fundamental prerequisite to exercising the right to take fish is the existence of fish to be taken.

506 F.Supp. at 203. In addressing the scope of the right, the court held:

...the correlative duty imposed upon the State (as well as the United States and third parties) is to refrain from degrading the fish habitat to an extent that would deprive the tribes of their moderate living needs.

506 F.Supp. at 208. The tribes had the burden to prove that challenged actions would:

...proximately cause the fish habitat to be degraded such that the rearing or production potential of the fish will be impaired or the size or quality of the run will be diminished.

506 F.Supp. at 208, but the state had the burden:

...to demonstrate that any environmental degradation of the fish habitat proximately caused by the State's actions (including the authorization of third parties' activities) will not impair the tribes' ability to satisfy their moderate living needs.

Id.

That decision was appealed to the Ninth Circuit, where a 3 judge panel upheld but modified the lower court. (694 F.2d 1374). The majority opinion agreed that treaty fishing rights imposed obligations on the state to ensure that neither it nor its citizens destroyed the right to take fish through habitat destruction, but it disagreed with Judge Orrick's formulation of the standard of care to be observed. It limited the scope of the protection to "reasonable steps commensurate with the resources and abilities of [the state] to preserve and enhance the fishery when their projects threaten then-existing harvest levels." 694 F.2d at 1389. A concurring opinion found that it was unnecessary to reformulate Judge Orrick's decision because there was no practical difference between his decision and the decision of the majority. 694 F.2d at 1389.

The tribes and United States were granted rehearing en banc. The initial (unpublished) opinion of the 11 judge court on December 17, 1984, was that the state's appeal should be dismissed because the case was not ripe for judicial review. The state then received a second en banc rehearing. This time the court voted 7-4 to vacate the decision of Judge Orrick on procedural grounds, holding that a declaratory judgment was inappropriate on the general legal question without a challenge to a specific proposed activity or development. The 1984 en banc opinion was withdrawn and the 3-judge panel opinion was vacated. 759 F.2d at 1354.

Two of the seven judges in the majority were the judges who formed the majority in the initial 3-judge appeal; they adhered to their view of the scope of the treaty right to protect fish habitat. 2 of the dissenting judges would have reached the merits and affirmed the decision of Judge Orrick. None of the 11 judges said that they would reverse the lower court on the merits. The case was then remanded to the district court, where it has remained inactive.

2. **Kittitas Reclamation District v. Sunnyside Valley Irrigation District, 763 F.2d 1032 (9th Cir.1985), cert. denied, 474 U.S. 1032, 106 S.Ct. 593, 88 L.Ed.2d 573 (1985).**

Kittitas is in some respects the most striking application of the principle that harm to fish habitat that causes a loss of fish is legally equivalent to a direct harvest of fish.

The case started when too few spring chinook salmon were returning to the Yakima river in 1980 to meet spawning needs. This weak return led the federal court in United States v. Oregon (a Columbia river treaty Indian fishing rights case parallel to United States v. Washington) to issue an injunction against any harvest of chinook by members of the Yakima Tribe. The state had argued, and the district court found, that every spring chinook salmon was necessary for spawning escapement. The Ninth Circuit upheld this injunction, noting that the Tribe had intervened in United States v. Oregon "to establish and protect its treaty fishing rights; a basic assumption of that action was that there would be fish to protect." United States v. Oregon, 657 F.2d

1009, 1014 (9th Circ. 1981).

Later in 1980, the Yakima Tribe discovered about 60 spring chinook salmon redds (nests of salmon eggs) in an off-reservation location on the Yakima river. These redds were a product of the same run of spring chinook that had been the subject of the injunction against Yakima tribal fishing. The redds had been deposited at a time of artificially high water because of water releases for irrigation purposes. As a result, if the gates of the Cle Elum dam had later been closed as usual to store water, the redds would not have remained covered with water until they hatched, thus destroying them.

The Yakima Tribe sought protection for these redds from the court that had continuing jurisdiction over water allocations on the Yakima river from a 1939 decree in the Kittitas case. The district court ordered sufficient water to be released to protect the survival of the salmon. The Court of Appeals affirmed.

Although the court was careful not to express an opinion regarding the extent to which that result could be based solely on the treaty fishing rights of the Yakima Tribe, those fishing rights played a critical role in the case.

3. **Northwest Indian Cemetery Ass'n. v. Peterson, 565 F.Supp. 591 (N.D. Calif. 1983), 764 F.2d 581 (9th Cir. 1985), 795 F.2d 688 (9th Cir. 1986), rev'd on other grounds sub nom Lyng v. Northwest Indian Cemetery Protective Association, 485 U.S. 439, 108 S.Ct. 1319, 99 L.Ed.2d 534 (1988).**

This case involved numerous challenges to a decision of the United States Forest Service to construct a road, and adopt a management plan permitting extensive logging, within the Blue Creek Unit of the Six Rivers National Forest in California. The district court granted injunctive relief against construction of the road and implementation of the management plan on various grounds, one of which was the effect of the two proposals on fish and fishing rights on the Hoopa Valley Indian Reservation.

The court found that spawning gravel in Blue Creek was responsible for approximately 5% of the production of anadromous fish in the Klamath river system. 565 F.Supp. at 590 n.2. The court considered that to be "a significant portion" of the system's production, holding that "... the adverse impact of either project on water quality and fish habitat in Blue Creek ... would significantly decrease the quantity of anadromous fish present in those portions of the Klamath River that flow through the Hoopa Reservation." 565 F.Supp. at 605. The court concluded that the Forest Service's proposals violated the water and fishing rights of the Indians of the Hoopa Valley Reservation.

On appeal, the Ninth Circuit vacated that portion of the district court decision that required studies to demonstrate that there would be no loss of fish due to logging. The court based this on the fact that the Hoopa Tribe was not a party to the case and because the relief awarded on other grounds would be sufficient to protect the water quality necessary for fish. 764 F.2d 581, 595 n.5. This language was repeated on the decision on rehearing, 795 F.2d 688, 697 n.10. Ultimately the case was reversed on other grounds by the Supreme Court.

4. Umatilla v. Alexander, 440 F.Supp. 553 (D. Ore. 1977).

The duty to protect fish and fishing rights reserved by treaties with Indian tribes applies to federal agencies as well as state and local governments and private parties. Here the United States Army Corps of Engineers planned to dam Catherine Creek in Northeastern Oregon, pursuant to Congressional authorization. The dam would have inundated fishing stations of the Confederated Tribes of the Umatilla Indian Reservation and it would have destroyed a steelhead run above the dam. The court issued a declaratory judgment that the proposed dam would violate the Tribe's treaty fishing rights by both the loss of the steelhead run and the loss of access to several fishing stations.

The court was not persuaded to the contrary by the fact of Congressional authorization of the dam because it did not appear that Congress was aware of the existence of treaty fishing rights in that location. The court held that absent an express and specific authorization by Congress to abrogate treaty rights, the Corps could not do so. Nor did the court find it persuasive that the Corps planned to mitigate for the loss of fish by construction of a chinook hatchery, given the complete loss of the steelhead run and destruction of fishing places.

5. No Oilport! v. Carter, 520 F.Supp. 334, 371-73 (W.D.Wash. 1981).

No Oilport! involved construction of an oil pipeline from Port Angeles, Washington, to Clearbrook, Minnesota. A number of environmental organizations, the city of Port Angeles, Clallam County, and eight Indian tribes with treaty fishing rights in Puget Sound, brought actions to halt construction of the pipeline. The court granted summary judgment for defendants on all issues save the tribes' claims regarding interference with their treaty fishing rights. With respect to those claims the court found that genuine issues of material fact were presented. The court found that if the tribes could establish that the pipeline would "proximately cause the fish habitat to be degraded such that the rearing or production potential of the fish will be impaired or the size or quality of the run will be diminished," then defendants could not prevail on summary judgment. 520 F.Supp. at 372. The court relied on the Phase II decision by Judge Orrick, before that decision was vacated.

6. **Joint Board of Control of the Flathead, Mission and Jocko Irrigation District v. United States**, 646 F.Supp. 410 (D.Mont. 1986), rev'd, 832 F.2d 1127 (9th Cir. 1987), cert. denied, 486 U.S. 1007, 108 S.Ct. 1732, 100 L.Ed.2d 196 (1988).

The Confederated Salish and Kootenai Tribes of the Flathead Reservation reserved an exclusive right to fish within their reservation by the Treaty of Hellgate, 12 Stat. 975, 976 (1859). In this suit by irrigation districts, the district court held that the Bureau of Indian Affairs (BIA) must allocate reservation water between tribal fisheries and irrigation needs by a "just and equal distribution" of all waters of the reservation. 646 F.Supp. at 426. The Ninth Circuit reversed, holding that to the extent the Tribe exercised aboriginal fishing rights, the language of the Treaty of Hellgate preserved those rights and water needed for them:

[o]nly after fishery waters are protected does the BIA ... have a duty to distribute fairly and equitably the remaining waters among irrigators of equal priority.

832 F.2d at 1132 (emphasis in original).

See also Confederated Salish and Kootenai Tribes of the Flathead Reservation v. Flathead Irrigation and power Project, 616 F.Supp. 1292 (D.Mont. 1985), an earlier stage of the same case, and Joint Board of Control of the Flathead, Mission and Jocko Irrigation District v. United States, 862 F.2d 195 (9th Cir. 1988), a later stage of the same case.

7. **Pyramid Lake Paiute Tribe of Indians v. Morton**, 354 F.Supp. 252 (D.D.C. 1972 and 1973).

The district court held that the Secretary of Interior was required to provide all water possible to Pyramid Lake to preserve fish depended upon by the Tribe, after fulfilling requirements of earlier decrees and contracts. 354 F.Supp. at 258.

The Ninth Circuit approved of this holding in the related case of Truckee-Carson Irrigation District v. Secretary of Department of Interior, 742 F.2d 527 (9th Cir. 1984). See also Pyramid Lake Paiute Tribe of Indians v. United States Department of Navy, 898 F.2d 1410, 1420 (9th Cir. 1990), and Pyramid Lake Paiute Tribe of Indians v. Hodel, 882 F.2d 364 (9th Cir. 1989).

8. **Colville Confederated Tribes v. Walton**, 752 F.2d 397, 405 (9th Cir. 1985), cert. denied, 475 U.S. 1010, 106 S.Ct. 1183, 89 L.Ed.2d 300 (1986). (See also 460 F.Supp. 1320 and 752 F.2d 397).

9. **United States and Spokane Tribe of Indians v. Anderson, et al.**, Civ. No. 3643, E.D. Wash., Memorandum Opinion and Order of July 23, 1979). (See also: United States v. Anderson, 736 F.2d 1358, 1365 (9th Cir. 1984).
10. **United States v. Adair**, 478 F.Supp. 336, (D.Ore. 1979), Aff'd as modified, 723 F.2d 1394 (9th Cir. 1983), Cert. denied, 467 U.S. 1252, 104 S.Ct. 3536, 82 L.Ed.2d 841 (1984).

These three cases hold that Indian tribes have reserved water rights in streams located within (Walton), bordering (Anderson) and outside (Adair) their reservations. (In Adair, the water right was based on a reservation that had since been terminated, leaving the water rights in an off-reservation posture.) The declared water rights included both sufficient water to irrigate all practically irrigable acreage (on existing reservations) and sufficient water for preservation of each tribes' fisheries. Thus all three cases can be read as a recognition that fishing rights include a right to an element of habitat, water, that is necessary to make such rights meaningful.

In Adair, the court held specifically that the Tribe's reserved fishing rights allowed it to "prevent other appropriators from depleting the streams (sic) waters below a protected level...." 723 F.2d at 1411.

In Anderson, the court found that water temperature, as well as sufficient quantities of water, was critical to fish survival. The court found that survival of the native trout of the Chamokane system required a water temperature that did not exceed 68 degrees. The court therefore required sufficient instream flow to ensure that appropriate water temperatures were maintained to guarantee survival of the fish.

These cases are consistent with the proposition that a right to engage in a fishery carries with it a concomitant right to protect habitat necessary for fish survival, including both water quantity and water quality.

11. **Muckleshoot v. Hall**, 698 F.Supp. 1504 (W.D.Wash. 1988).

This case involved a challenge by the Suquamish and Muckleshoot Indian Tribes to the construction of a marina in Elliott Bay. The court granted the tribes' request for an injunction based on the interference the marina would cause to the ability of the tribes to fish in a portion of their usual and accustomed fishing grounds. After the preliminary injunction was issued a settlement was reached. Although the injunction did not address questions of fish habitat, the question of access to fishing grounds is also implicated in some development projects, and the legal issues are similar.

12. Muckleshoot Tribe of Muckleshoot Indian Reservation v. Puget Sound Power and Light Company and City of Auburn, Washington, No. 472-72C2V (W.D.Wash.), Order of October 8, 1986.

The Muckleshoot Tribe sought damages and other relief for alleged violations of its water and fishing rights from construction and operation of a dam and water diversion on the White river. The district court granted Puget Power's motion to dismiss the tribe's fisheries damage claim on the basis that the treaty was not self-executing, at least with respect to damage claims against private parties. The court followed a ruling to the same effect in a similar case, Nisqually Indian Tribe v. City of Centralia, No. C75-31T, (W.D.Wash.), Order of November 18, 1981. These decisions are debatable, however, given the Supreme Court's clear statement that the treaties reserving fishing rights are self-executing. Fishing Vessel, 443 U.S. at 693, n.33. Neither ruling was ever tested on appeal because both cases were settled for substantial monetary and other relief.

CONCLUSION

Both under policy and law, it is unequivocal that land use activities, such as those proposed under the DSEIS, that could affect the number of fish available for harvest by Indian tribes with treaty fishing rights, must be acknowledged and subject to restrictions designed to prevent, minimize, or mitigate for such impacts. The number of fish available can be affected by impacts on habitat needed for fish, or as a result of impacts on the ability of tribal members to harvest fish. Therefore, in order to minimize conflict with treaty-reserved rights and potential litigation, the federal government must consult and enter into a collaborative and cooperative processes with potentially affected Indian tribes in the development and implementation of the FSEIS.

Consistent with: (1) the recognition that treaty resources are property rights protected under the United States Constitution, and cannot be "taken" other than by an explicit act of Congress with "just compensation" (2) the United States has treaty obligations to Canada regarding protection and restoration of anadromous fish, and (3) the NW Power Planning Council and Washington state's objective of doubling the salmon runs in the state and Columbia River Basin, the federal government should clearly state its habitat objective is:

"To protect and restore fish habitat to its optimum level that provides for harvestable populations adequate to meet tribal needs in perpetuity"

APPENDIX C

DRAFT

LANDSCAPE ECOLOGY AND WILDLIFE PROTECTION

Policy—Wildlife Habitat Protection. The purpose of this chapter is to provide the policies and processes to manage change in the type and condition of habitat in the context of the managed forest. These policies provide a framework for refining and adapting the forest management system to reflect current and future understandings of wildlife and forest ecology interactions. The intent is to address concerns of biological diversity and protection of wildlife through a landscape ecology approach to forest land management. This strategy to protect wildlife and their habitats will rely on regulatory, cooperative, and voluntary efforts to meet the goals and objectives herein. The following sections are structured to provide clear direction for forest land managers and regulators.

Section 1 identifies goals; Section 2 describes the objectives and introduces the regulatory process, including identification of required elements; Section 3 establishes specific guidelines and criteria for wildlife management plans; Section 4 provides the basic framework for forest practice application processing as well as defining baseline rules; and Section 5 ensures implementation effectiveness.

(1) Consistent with the purposes and policies of this chapter, the intent of these rules are to protect wildlife and their habitats in a manner consistent with the principles of wildlife habitat management, forest management, and landscape ecology. The department, in cooperation with the departments of wildlife, fisheries, ecology, federally recognized Indian tribes, local governments, forest landowners, and interested public, shall establish a process and priorities for developing wildlife habitat management plans, and provisions for their implementation and enforcement. The plans shall seek to accomplish the following goals:

- (a) Provide suitable habitat for wildlife species closely associated with interior forest and/or late successional forest characteristics;
- (b) Provide for protection of public resources that are sensitive to habitat alterations;
- (c) Provide for landowner flexibility in developing management plans; and
- (d) Provide for adapting wildlife habitat management plans to accommodate emerging scientific knowledge and changing circumstances, including findings and recommendations derived through watershed analysis.

(2) The department of wildlife, in cooperation with the department of natural resources and federally recognized Indian tribes, should develop a process to accomplish the goals in section (1). At a minimum, this process shall include:

- (a) Identification of wildlife habitat management objectives for interior-forest and late successional habitat for appropriate landscape units;
- (b) In cooperation with the departments of fisheries, ecology, trade and economic development, local governments, forest landowners, and interested public, develop an education strategy and program to inform the public and forest landowners of the purposes of these wildlife protection strategies and programs and to seek voluntary efforts from forest landowners to meet the objectives of this section;
- (c) An option for forest landowners, with the assistance of the affected tribes, and state departments of wildlife and natural resources, to develop plans consistent with the objectives established pursuant to section (3) below. If a landowner chooses not to develop a plan, the departments of wildlife and natural resources shall develop the plan pursuant to the goals and objectives established herein. These agencies shall utilize guidance provided by affected Indian tribes and the department of wildlife's Priority Habitat and Species program management recommendations;
- (d) Use of expertise and data of the department of wildlife and federally recognized Indian tribes in establishing area specific wildlife habitat goals and objectives in the development of wildlife habitat management plans;
- (e) Opportunity to use additional information and expertise from forest landowners, federal and local government agencies, and other interested public in the development of wildlife habitat management plans;
- (f) A process for amending the wildlife habitat management plans to meet resource protection goals; and
- (g) Baseline rules that apply during the interim period between rule adoption and wildlife habitat management plan implementation.

(3) That portion of a forest landowner's forested land base within a Watershed Administrative Unit (WAU) necessary to accomplish the goals and objectives of this section shall be managed consistent with a wildlife habitat management plan for the purpose of maintaining or developing specific successional habitat characteristics,

including but not limited to late seral stages. These plans shall include:

- (a) Areas that are required to be left unharvested or managed pursuant to other state and federal statutory and regulatory requirements: PROVIDED, That nothing in this section shall affect these statutory or regulatory requirements. Such areas shall include, where appropriate to meet the objectives of this section, but are not limited to, forested riparian management zones, forested upland management areas, forested areas around wetlands, and forested shorelines.
- (b) To maintain viable populations of associated species and stable communities, a minimum of forty percent (40%) of the forested landscape within appropriate ecologically defined landscape management units shall be managed to retain or restore the suitable habitat structure necessary for species typically associated with interior and/or late successional habitat (REFS; 2,15,16,17,19,26,27). The targeted quantity for this structure within each defined planning area is seventy percent (70%) of the forested landscape managed to retain or restore habitat for interior and/or late successional habitat (REFS; 5,13,14,17,19). Distribution for this habitat is not fixed spatially and can be expected to change over time.
 - (i) Late successional and interior-forest habitat patches shall be connected by a system of forested corridors concentrated primarily on drainage systems (REFS 8,28).
 - (ii) Forested corridors must be functional linkages containing similar habitat characteristics to those patches that they connect (REFS; 3,6,8,10,13,14,18,23,26). When analyzing corridor effectiveness elements of physical structure that must be considered shall include; late-successional tree diameter diversity, canopy cover, snags, down woody material, understory development, and security and thermal cover.
- (c) Forest practices shall be permitted within the late successional habitat areas subject to a wildlife habitat management plan to:
 - (i) Protect against fire and disease outside the wildlife habitat management areas; and
 - (ii) Provide or create important habitat characteristics consistent with this section.

- (4) In approving, conditioning, or denying any forest practices applications:
- (a) The department shall condition applications according to applicable wildlife habitat management plans developed pursuant to this regulation.
 - (b) In those watersheds where there has been $\geq 30\%$ cut-over (REFS; 5,13,14,17,19), and if wildlife habitat management plans have not been adopted, the department shall:
 - (i) in cooperation with the department of wildlife and affected Indian tribes, delineate important habitat patches providing interior-forest and/or thermal cover and connecting corridors within 7 kilometers of the proposed forest practices (REFS; 1,3,9,13), with priority given to late seral stage habitat, and
 - (ii) condition forest practices consistent with protecting and restoring habitat structure in areas delineated through (4)(b)(i) and with the department of wildlife's Priority Habitat and Species program management recommendations, unless the department has substantial scientific basis for rejecting those recommendations,
 - (c) Where two or more Priority Habitats or Species are identified in the same area with conflicting management recommendations, the department will coordinate and consult with the department of wildlife and affected Indian tribe(s) to resolve the differences in management recommendations.
 - (d) Where conservation measures are being implemented by state or tribal wildlife managers to protect populations of game species, the department shall condition forest practices applications to provide recovery of habitat effectiveness. Conditions shall include restrictions governing; clearing sizes and configurations, forage:cover ratios, and open road densities pursuant to recommendations provide by affected tribes and the department of wildlife.
 - (e) In those watersheds where there has been $\geq 50\%$ cut-over (REFS; 5,13,14,17), and if wildlife habitat management plans have not been adopted, the department shall deny forest practices applications until a wildlife habitat management plan has been adopted and implemented consistent with the goals and objectives of this regulation.
- (5) The department shall:
- (a) provide for monitoring activities to assess the implementation and

effectiveness of wildlife protection measures;

- (b) in cooperation with the Timber-Fish-Wildlife participants, develop an informal conflict resolution process to foster the cooperative development of wildlife habitat management plans.

DEFINITIONS:

- () "Cut-over" shall mean those timber harvest practices that have been approved on the site within the past 30 years and could or already have altered the habitat to a stand that no longer exhibits the typical characteristics of a similar natural stand based on growth potential, species and vertical stratification, or existing stands that have developed under similar physical conditions.

- () "Interior-forest" is found in patches of sufficient size and appropriate configuration to provide habitat structure that is not significantly influenced by edge habitat. Use the following steps to determine if a forested patch has interior forest (Laurance and Yensen. Predicting the Impacts of Edge Effects in Fragmented Habitats. Biol. Conserv., 55, 1991. pp. 77-92).

1. Determine the metric Shape Index (SI) [Patton 1975]:

$$SI = \frac{P}{200[(TA * \pi)^{0.5}]}$$

patch P = Perimeter of patch, and TA = Total area of

2. Determine affected area (AA) (area influenced by edge):

$$AA = \{(3.55) (d) (SI) [(TA/10,000)^{0.5}]\}$$

AA = Affected area
d = 200 meters (edge habitat)

* If $SI \leq 1.5$ then adjust by:

$$AA_{adj} = AA * [1 - (0.265 (AA/TA)/(SI)^{1.5})]$$

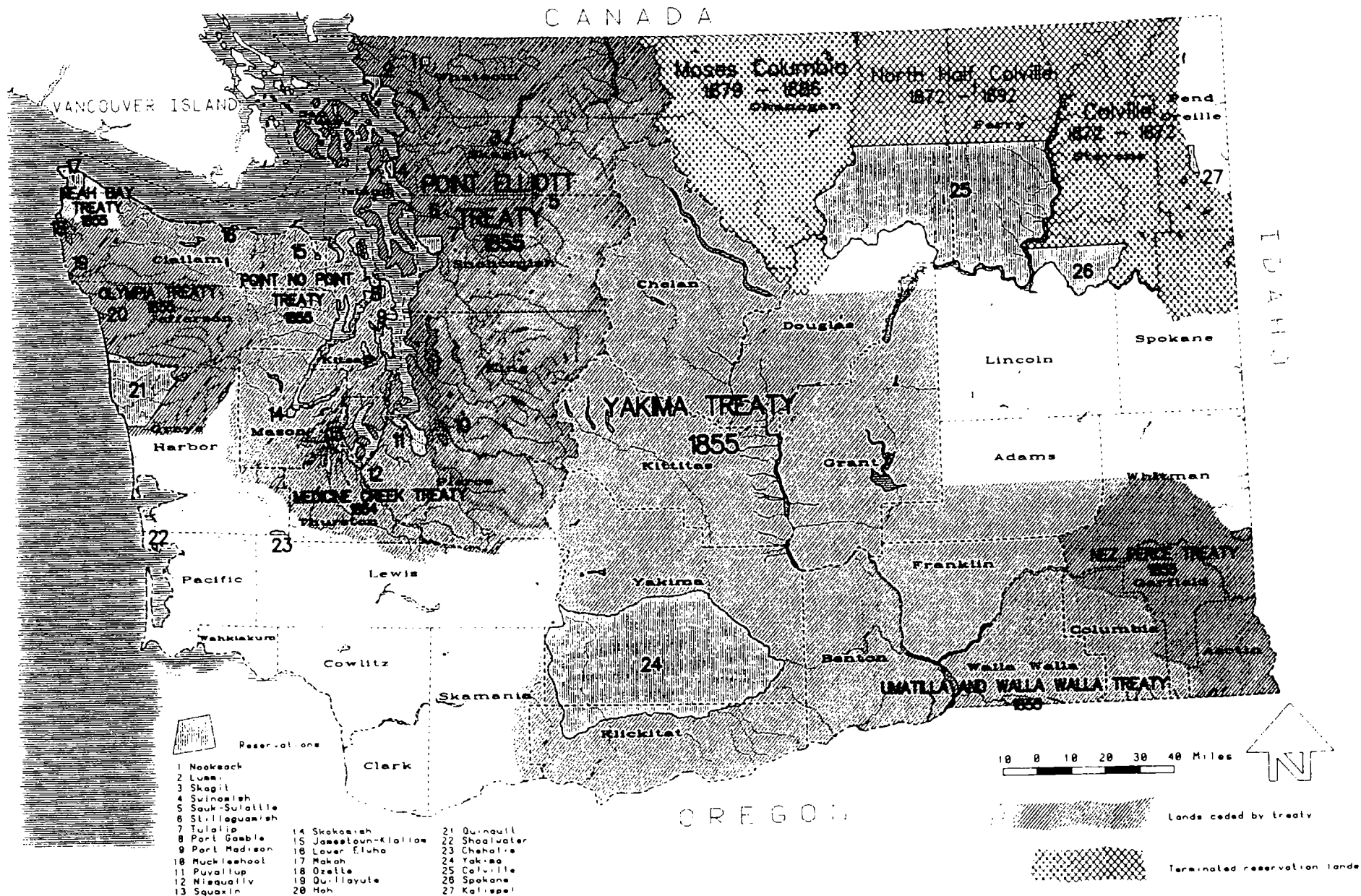
3. Subtract either AA_{adj} or AA from TA to determine whether or not interior forest exists.

Literature Review

Landscape Ecology and Wildlife Protection Proposal

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APPENDIX D
TREATY RESERVATIONS AND CEDED AREAS



Northwest
Indian
Fisheries
Commission



STATE OF WASHINGTON

Ceded Tribal Lands and Reservations



Society of American Foresters

Professionals advancing forest science, technology, practice, and a conservation ethic to benefit society.

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October 28, 1993

The Honorable William J. Clinton
President of the United States
1600 Pennsylvania Avenue
Washington, DC 20500

Dear Mr. President:

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The Society of American Foresters (SAF) represents the forestry profession in the United States and has an interest in the development of an enduring solution to resource management issues on our national forests. Decisions regarding policy and management of federal forest lands in the Pacific Northwest are recognized by SAF as issues of national importance.

I represented the SAF at your Forest Conference April 2, 1993, in Portland, Oregon, and wrote to you about SAF's desires to continue to play a part in the search for proper resolution of national forest management issues in the Pacific Northwest.

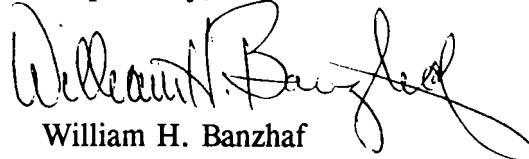
The Society of American Foresters pledged to put its members' talents to use in this process, and in keeping with that pledge, we respectfully submit the following comments from our SAF regional affiliates in Northern California, Oregon, and Washington, on the *Draft Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-growth Forest Related Species Within the Range of the Northern Spotted Owl*, and related documents.

The enclosed comments constitute the position of our three state affiliates on the documents prepared as a result of your Forest Conference. They are based upon study and analysis by professional foresters in the region who bring their special regional knowledge

The Honorable William J. Clinton
October 28, 1993
Page 2

and experiences to bear on issues surrounding the development and implementation of a forest plan for a sustainable economy and environment for the Pacific Northwest.

Respectfully,

A handwritten signature in black ink, appearing to read "William H. Banzhaf". The signature is fluid and cursive, with a long, sweeping tail that extends to the right.

William H. Banzhaf
Executive Vice President
Society of American Foresters

WHB/cas

Enclosure

cc: Vice President Gore
Interagency DSEIS Team
Secretary of the Interior
Secretary of Agriculture
Katie McGinty, White House Environmental Policy Director

Regional Society of American Foresters Comments and Position
on
President Clinton's Forest Conference Documents

Introduction

This commentary presents the position of the Society of American Foresters (SAF) affiliates in the Pacific Northwest about the documents prepared as a result of President Clinton's Forest Conference of April 2, 1993, held in Portland, Oregon. It is based upon study and analysis by professional foresters in Northern California, Oregon, and Washington, and brings to bear their special regional knowledge and experiences on issues surrounding the development and implementation of the President's forest plan for the Pacific Northwest.

Comment is confined primarily to the technical, scientific, and administrative strengths and limitations of the questions (issues) thus far addressed. Part I summarizes findings and conclusions and makes recommendations that may be taken to resolve some of the identified conflicts. Part II focuses on the DSEIS, and Part III on the FEMAT Report.

PART I

Summary And Recommendations

The regional SAF affiliates' review of the Forest Conference documents, in particular the DSEIS and the underlying FEMAT Report, leads to the following conclusions and associated recommendations:

- (1) The DSEIS/FEMAT documents have not adequately evaluated the "human and economic dimensions" of its proposed change in federal public forest policy in the Pacific Northwest because it has not produced an identification and quantification of the specific social and economic consequences of their proposed actions.¹
- (2) The DSEIS alternatives do not adhere to the key principles outlined by the President at the Forest Conference. The implementation of the preferred alternative, a document based more on professional judgment and incomplete or theoretical science than on facts, will cause major change in forest practice.
- (3) Operationally untested, the recommended plan is risky. The plan has the potential to influence forestry practice on all forest lands, both public and private. The impacts of this prospect on private forestlands are not explained in the planning documents.
- (4) A forestry program for the Pacific Northwest such as envisioned by the President's proposal must be designed with substantial involvement of professional foresters having day-to-day on-the-ground managerial experience. Their absence on the FEMAT working group was conspicuous. The knowledge and experience of accomplished managers makes them best suited to develop management plans that integrate biological, social, and economic considerations and which comply with existing laws and regulations. Managers, after all, will be called upon to implement the President's plan, whatever form it takes, and be held accountable for the results.
- (5) The FEMAT report and associated documents demonstrate a tremendous effort, given the complexity of issues, the large numbers of people involved, and the exceptionally short period in which it was done. Its shortcomings are partially explainable by this fact alone. Even the FEMAT participants recognize and acknowledge many of the study's limitations. A broader range of options needs to be developed to more fully access the ranges of biological and economic possibilities available before federal forest management policies and practices are established.

¹/ Such as a full accounting of the direct and indirect employment and family support impacts and the consequential increase in divorce rate, dysfunction in family relationships, alcohol and drug abuse, suicide, domestic violence, drop-out rate, just to name a few.

*Regional SAF Comments and Position
on President Clinton's
Forest Conference Documents*

- (6) The narrow focus and ambiguities of existing legislation and regulation needs to be addressed. The SAF and other professional and scientific societies should be considered in an active role through collaborative initiatives to draft proposals.
- (7) Accelerated research and elaboration is encouraged in the following three areas for which the knowledge base is especially inadequate and the costs of policy choices and managerial error high:
 - a) aquatic and riparian habitats
 - b) species viability assessments
 - c) ecosystems management at the landscape level
- (8) The President's plan is a multi-species plan that strives to focus on ecosystems and ecological communities. Management strategies emphasizing an ecosystem approach rather than a species-by-species approach to managing for biodiversity should be implemented as operational guidelines based on the best scientific information available.
- (9) The Adaptive Management Area (AMA) concept, an integral part of the President's plan, should be supported and encouraged as a way to test and evaluate new approaches to forestry and their performance in regard to the communities dependent on them.
- (10) Monitoring programs must be approached with caution to ensure that they are both scientifically and legally defensible, and are adequately funded over their life to ensure reliability of results.
- (11) Current forestland and resource management planning techniques are often inconclusive, costly, and lengthy. Involved federal agencies should strive to utilize SAF and other scientific societies in re-examining planning technologies.
- (12) The FEMAT did not address directly the implications of the President's plan for non-federal public and for large and small private land owners, a serious oversight that needs repair. The affected regional Society of American Foresters affiliates support the President's objective to relieve the regulatory burden of non-federal lands, and urges the U. S. Fish and Wildlife Service to first assess what contributions are needed to meet the President's objectives, and comply with the ESA. Any 4(d) rule should clearly reflect these objectives.

*Regional SAF Comments and Position
on President Clinton's
Forest Conference Documents*

- (13) Adequate and stable funding over time must be assured as it is critically important to support community social and economic adjustments and to develop new or expanded forestry programs (especially research and monitoring).

PART II

Comments On Draft Supplemental Environmental Impact Statement (DSEIS) on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl

PURPOSE AND NEED

This section describes, in accurate, general terms, the President's five principles for formulation of a plan (page 1-3) and the federal district court mandates for this DSEIS. The Administration's proposed forest plan and the array of alternatives presented in the DSEIS, however, exhibit serious shortfalls in fulfilling the President's five key principles. Our evaluation of this situation follows:

The President's Principles

Principle 1. "We must never forget the human and economic dimensions of these problems..."

The proposed forest plan and alternatives indicate a lack of knowledge about the economics of the timber industry, the multiplier effect on employment within our region and the marketing complexities of forest products. The job loss estimates are unrealistically low, as are the estimates of the value of the industry to the region (page S-15) and impact to consumers (FEMAT, page VI-38).

Forest products related employment will decline under the Administration's proposed plan no matter what numbers are used and federal timber dependent communities will incur greater suffering. The DSEIS fails to identify and measure the significant social consequences of the Administration's proposal. These should be identified for each alternative. Contrary to the President's first principle, the human and economic dimension has been minimized. The work that was to be accomplished by Labor Secretary Robert Reich and the team on Socio-Economic Assessment is not incorporated into the DSEIS, and as a consequence, NEPA and CEQ requirements have not been met. A new DSEIS needs to be issued with the Socio-Economic Assessment included. Even the Administration's own scientist, Dr. Jack Ward Thomas, said, "to ignore the human condition in conservation strategies is to fail." From a NEPA perspective alone, the Administration's plan fails the President's own directives and does not promote a wide range of commodity and non-commodity values for the general public.

Principle 2. "We need to protect the long term health of our forests..."

"Preservation" alone is not an acceptable plan to protect the health of our national forests. Preservation is already being widely practiced in the management of federal forest lands. Some of the more prominent and large scale examples are the wilderness areas established under the authority of the 1964 Wilderness Act which have placed millions of acres of federal public lands into the National Wilderness Preservation System. The maintenance, enhancement and restoration of healthy forest ecosystems can be done most efficiently with continuing active management that includes timber harvesting and reforestation under scientifically-proven forestry practices.

Given the large acreage of "Reserve" areas (Late-Successional and Riparian) and other areas where forest management is extremely limited (80% of federal land base within Option 9), the DSEIS plan fails to address the resulting increased catastrophic risk of forest fire, disease and insect infestation. Westside Cascade forests experience large natural events beyond human control (such as wildfire, storm damage, volcanic eruptions, etc.) which effect forest health. An independent assessment of risks and natural disasters needs to be made.

Principle 3. "Our efforts must be scientifically sound, ecologically credible and legally responsible."

Policy makers, managers, and scientists should have the flexibility necessary to accommodate new scientific information and changing social values and needs. Proposed forestry methods need to be tested on a large scale, but should continue to be considered experimental until experience proves their worth. In the meantime we should not abandon methods that have proven effective for managing federal forests, as well as the 16 million non-federal acres of growing timber in the Douglas fir regions.

The President asked for a plan that would be "legally responsible". What this means exactly is unclear, but while the DSEIS mentions the existence of important federal statutes (DSEIS, FEMAT II-4), it fails to discuss their interrelationships and whether the alternatives considered satisfy applicable laws and regulations. Consequently, the DSEIS may not be "legally *sufficient*" and therefore subject to possible challenge.

Since none of the alternatives allow active ways to maintain early successional species, any of the alternatives will be illegal if one "early successional" species is believed to be

endangered. Consequently, none of the alternatives are "legally responsible."² New alternatives should be developed which are consistent with the President's directive of being "legally responsible."

Principle 4. "The plan should produce a predictable and sustainable level of timber sales..."

Even the reduced harvest levels projected, although easily supported by forest growth and inventory, may be impossible to attain according to some of the scientists who helped draft the plan. The effects of the Endangered Species Act on timber supply potentials has not been addressed. The prospect of appeals and litigation, the current political climate, and implementation uncertainty imposed on the alternative plans mitigate against establishing a predictable and sustainable level of timber sales in the short or long run. Principle 4 is inadequately dealt with in the DSEIS.

Principle 5. "We must make the federal Government work together and for society".

We agree that all the involved agencies should cooperate in the management of federal forests. Forest managers have been cooperating for decades in the Pacific Northwest, for example in the prevention and control of forest fires (under the auspices of the Clarke-McNary Act) and the control of insect infestations through the Northwest Forest Pest Action Council. Nevertheless, much remains to be done, including development of the President's plan and its implementation. Thus far, that process has essentially excluded operational forestry input from on-the-ground managers, relying instead mainly on input from academic and federal biologists. The plan should be reviewed and adjusted by land managers with operational experience to ensure all operational considerations have been made.

Requirements of Existing Law

The DSEIS does not purport to survey the statutes governing Forest Service and BLM land management activities. However, pages II-4 through II-6 of Appendix A (the FEMAT), upon which the DSEIS relies, set out the instructions of the Forest Conference Executive Committee. These need to reference other important statutes governing the Forest Service, principally the Organic Act of 1897 (ch. 2, 30 Stat. 34), the Multiple-Use Sustained Yield Act of 1960 (16 USC 528-531), the Forest and Rangeland Renewable Resources Planning

^{2/} E.g., compliance with 36CFR 219.26 Diversity: "Forest planning shall provide for diversity of plant and animal communities and tree species consistent with the overall multiple use objectives of the planning area."

Act of 1974 (16 USC 1601-1610). These statutes were in part amended by the National Forest Management Act of 1976, (NFMA). By its own terms, NFMA supplements the prior enactments, rather than replacing them. Among other provisions, important requirements of sustainability and community stability are ignored. This subjects the resulting management actions based on the FEMAT or on the DSEIS to court challenge for violating statutory mandates.

ALTERNATIVES

Each of the ten management/policy alternatives listed in the DSEIS would replace the current multiple use-sustained yield policy of federal forest management with an objective of trying to return most of our national forest lands to "pre-settlement" conditions (DSEIS, S-8). All of the ten alternatives represent radical change in management policy and an astounding reduction in output of renewable resources to a level far below historic production levels and the productive potential of our federal forest lands. While each alternative identifies a probable harvest level goal for the next decade, the prospects for achieving even these reduced harvest goals are slim given the severe operational constraints imposed within the "Designated Areas" where harvesting will be allowed to occur. Little to no harvesting will be permitted on 75% of the over 24 million-acre federal land base within the range of the spotted owl. Thus, compared to potentials today, little productive land will be available for scheduled timber harvest. Most timber harvests and other silvicultural activities would be relegated to these "Matrix" lands.

Under the preferred alternative, relatively intensive forest management and harvesting of federal timber is considered a subordinate use, relegated to a minority status in all alternatives. In the Administration's favored "Option 9", only 20% of the land base (4.85 million acres) is said to be available for timber production in the matrix, with some possibility for minor additional timber volume production from areas other than the "matrix". However, much of even this reduced land base is unlikely to be available for timber production. In reference to "Late Successional Reserves", the FEMAT states that acreage data about these areas has not been "subjected to error analysis or ground truthing." (DSEIS, FEMAT, page IV-53). The accuracy of the data, including the multiplicity of graphs and spreadsheets in the DSEIS and FEMAT, is suspect to foresters with on-the-ground experience and needs to be validated by field professionals. For example, "Riparian Reserves" have the potential of being 1000' wide, if the two 200 year old trees chosen for definition of the zone width are 250' tall; that is 500' on each side of the waterway. In many areas the "Riparian Reserve" maps make it uncertain where any harvesting can possibly take place, particularly when the other categorical restrictions that must be overlaid are considered.

The underlying goal of all the options is plainly beyond the simple "preservation" of existing old-growth forests. The goal is an attempt to return the majority of the region's national forest lands to "pre-settlement" conditions.³ Most of the allowed silvicultural activities are promoted for their ability to hasten the creation of late successional forest types. This ignores the historical fact that only 40-60 percent of the landscape at any one time during the past 1000 years has ever been occupied by late successional old-growth forests.⁴

Harvesting parameters associated with all the alternatives, including Option 9, are highly restrictive and costly, thus precluding harvest of low quality timber and leading to degraded stocking levels. Over time, this will significantly reduce the amount that can be bid for federal timber and will render many stands uneconomical for any future harvesting. Logging systems prescribed will often be those that are least efficient and most expensive (such as helicopter logging), whether or not such systems are essential to protect public resources. The imposition of overly restrictive harvesting practices causes an unnecessary net loss of wealth by substituting unproved and *expensive* harvesting systems for ones that were environmentally sound and profitable.

Timber sales have historically generated positive cash-flow to the U. S. Treasury, in addition to producing income sufficient to offset costs of forest protection and management, including recreation and wildlife programs. The DSEIS alternatives virtually assures an increase in deficit timber sales in the future and in many cases operational and managerial needs will require additional (appropriated) funds. Indeed, the DSEIS predicts negative returns.⁵ It will take a great deal of public tax money to pay for the many programs proposed, yet timber production will be reduced by at least 76 percent (DSEIS, FEMAT, page VI-5) and income even more. Even *if* USFS stumpage prices were to increase by 1/3 as *assumed*, sufficient moneys to fund these programs will not result.

None of the alternatives consider habitat contributions of private or state lands for threatened species. The scientists were aware of the large owl populations found on those managed forests, yet they were not taken into account. The consideration of habitat on state and private forestlands would permit alternatives for considerably higher levels of timber

³/ DSEIS, Pg. S-8.

⁴/ Jan Henderson, *Trends in Amount of Old-growth Forest for the Last 1,000 Years in Western Oregon and Washington, Response to Congressman Robert F. Smith*, September 28, 1989.

⁵/ DSEIS Pg. B-71, paragraph 7.

production from public lands. New alternatives should be developed considering contributions to habitat from state and private lands.

The DSEIS does not make an adequate case for why such a radical change in policy is; 1) necessary to achieve specific objectives or 2) worth the enormous cost in terms of social displacement and lost productivity, which have been ignored. The "science" included in the DSEIS is limited. No opportunity was provided the general public, the industry, the professional and scientific community at large, and the affected communities to develop the alternatives presented in the DSEIS. An alternative plan is needed that recognizes the needs of the nation and the world for renewable resource production, a plan that recognizes the *responsibility* of the U. S. Government to manage its natural resources to meet those needs, and a plan that can provide a stable future for the forest products industry and all forest dependent communities, as well as the non-consumptive needs of society.

Implementation

The DSEIS (FEMAT VIII-32) lists four phases of "Implementation" that would require immediate and concurrent actions, some that are ongoing. This process is supposed to insure planning consistency until an option is chosen. Phase One is now underway to identify actions that are to be completed in one year. Phase Two is for refining region-wide components, training, development of watershed analysis approaches, and (if possible), harvest some timber. Phase Three is to identify actions to be completed in the short term (4 years), hopefully, including continuation of a short-term timber sale program. Phase Four is for identifying and carrying out actions to develop a new forest/provincial plan (1-10 years). The report states, "management activities will continue in keeping with the selected option and current plans until new plans are completed" (DSEIS, FEMAT, Pg. VIII-31), indicating that stability and predictability of national forest policy will remain in question for quite some time.

The conclusions at the end of the chapter are disturbing, "...it is well to note that the selection of any option in this report is only the first building block for ecosystem management. It is visualized that a second phase be initiated whereby the concept is extended to a broader land base and in a larger landscape concept" (DSEIS, FEMAT, Pg. VIII-41). This could be interpreted as a step toward federal regulation of forest management activities on private lands. Additionally, while the report calls for substantial non-federal cooperation, the development of standards and guidelines is left largely to the federal government. The implementation strategy components discussed in the DSEIS include standards and guidelines for managing reserves, etc. Many of the standards and guidelines will conflict with the objectives of private land owners.

The DSEIS recommends formation of an interagency organization of immense proportions to carry out "implementation", and lists legislative changes that may be necessary. This will likely lead to the creation of yet another large, cumbersome, and expensive resource agency.

History Of Resource Management

Important facets of history are ignored in the DSEIS (Pg. 3 & 4, 4-6), as are important aspects of the contribution of natural resources to the region's and nation's growth and security. The timber resources of the Pacific Northwest have for decades fueled the steady growth and vitality of the region's social, political, and economic life. Timber from the Pacific Northwest has been utilized in the building of *one out of every four* American homes in this century.

For example, in the early years of this century the practice of forestry began in earnest to perpetuate our renewable resource based economy. These practices began with protection against fire and later were followed by artificial reforestation when all landowners could be assured their planted trees would not be lost to wildfire.

During the post-World War Two years, forestry on all Pacific Northwest forests improved dramatically as we learned from research how to prevent and minimize fire damage, reforest successfully, salvage timber killed by fire, insects, disease and wind and to increase timber yields by pre-commercial and commercial thinning, fertilization and application of the principles of genetics for growing better trees for reforestation.

An example of the results of these advances in forest management and silvicultural practices can be found in the Gifford Pinchot National Forest.⁶ In 1962, Gifford Pinchot National Forest timber grew at a rate of 156 bf per acre per year. By 1981, and despite a reduction in forestland area of about 20%, the net annual growth of timber on the Gifford Pinchot National Forest had increased to 287 million bf per year or 354 bf per acre per year, an increase in the *rate* of timber growth of 127% in less than 20 years!

TERRESTRIAL ECOSYSTEM

The DSEIS claims that harvesting and road building activities have reduced by about one-half the acreage of old-growth forests which were historically present on federal lands DSEIS, FEMAT IV-185-186). The DSEIS aims to reverse this with a system of "Late Successional

⁶/ Personal communication with Gifford Pinchot National Forest staff.

Reserves" that are proposed as the central feature of the ten options. The determination of the appropriate size for individual reserves is yet to be resolved by ongoing research. Reserves designed to accommodate the Northern Spotted Owl, for instance, are suggested at 30,000 to 100,000 acres each. The apparent motivation behind the concept of such large acreage reserves is to accommodate a myriad of organisms in addition to the targeted endangered or threatened species.

Even within "Matrix" lands managed for timber production, retention of about 15% of late-successional cover within cutting units as small patches of green trees is proposed as an objective of the reserve concept (DSEIS, FEMAT IV-188).

Landscape controls in "Matrix" and "Adaptive Management Areas" would be used to regulate human "disturbances" of the landscape. This proposal will impose a significant restriction on future availability of commercial saw timber. Where stream density is high such as the Oregon Coast Range, the size and configuration of Riparian Reserves will effectively eliminate the potential for commercial timber production in many areas.

Many species inhabiting old-growth federal forests have portions of their range on *non-federal* lands. These lands assume significance because they generally occur at lower elevations and in different ecological zones. When demands for habitat designation are placed on private timber land, a likely result of their proposals would be to extend management to a broader land base (DSEIS, FEMAT VIII-41), the public must embrace the concept of restitution and compensate landowners financially for losing the use of their real property. The DSEIS should not be silent on this matter. Alternatives need to be developed and assessments made which determine the probable cost to the taxpayer of this restitution on private lands.

AQUATIC ECOSYSTEM

The DSEIS treatment of "Aquatic Ecosystems" presents no new information and ignores some important existing data. Information presented is a collection of forest practices information from the 1970s and Washington state timber/fish/ wildlife project data from the 1980s. Stream temperature discussion in the DSEIS presents out-dated theory that elevated temperatures are deleterious or lethal in virtually all cases. The "Aquatic Ecosystems" sections and associated alternatives need to be rewritten and re-analyzed in light of all existing information.

Non-forest related impacts such as urbanization, marine fishery activity, estuarine development, agriculture land development and management, etc., are dismissed in the

DSEIS as having little or no relevance to salmonoid survival on forest lands. The importance of this omission is typified on a Yakima River tributary. The tributary stream leaves private forestland with substantial clear, clean flow. Having passed through agricultural lands, it enters the Yakima River almost dry due to irrigation water withdrawals. Alternatives need to be developed which address an integrated approach to saving threatened and endangered species.

The need for buffer zones has long been an issue, with much scientific and operational effort expended to design and manage them. State forest practices acts and regulations in Washington, Oregon and California contain sophisticated buffer zone and cumulative effects standards and management prescriptions to protect water quality, and fish and wildlife habitat. Inexplicably, the DSEIS ignores that work and instead proposes a series of "no-cut" buffer zones far in excess of anything that would be recommended based on existing information.

The aquatic ecosystem section fails to integrate the analysis and recommendations of the aquatic ecosystem report with other disciplines. After recognizing many flora and fauna are important in and to the aquatic environment, the DSEIS uses salmonoids as the nearly exclusive target fauna. While the report is in several respects a good start, further work should involve other disciplines and include other philosophies.

It is disappointing and scientifically inaccurate for the DSEIS to perpetuate the philosophy that "natural" conditions are the *only* conditions that can provide high quality aquatic environments. Many undocumented sweeping statements are made about the poor conditions of state and private aquatic lands. Little credit is given to recent changes in forest practices acts, and no recognition or opportunity is given to manage aquatic (or terrestrial) systems for excellence for many values. The team limited itself to alternatives principally relying on the natural aquatic environment can provide all elements of high quality habitat. Other pro-active alternatives need to be developed.

ECONOMIC CONSIDERATIONS

There is so much uncertainty about the level of federal timber harvest under preferred Option 9 that comprehensive economic evaluation is difficult. Additionally, legal maneuvering, even after a harvest level is selected, may stall or halt sales. Short-term harvests are contingent on having adequate time to prepare sales, so agencies, timber purchasers and their employees and customers cannot be assured that the current timber famine in the Pacific Northwest will be eased. The long-term outlook could be worse than projected.

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Statistical inconsistencies (i.e., non-timber value added and ownership representation) exaggerate the economic contribution of minor forest products. It is unrealistic to expect that recreation and fisheries initiatives will cover the drop in forest industry employment (timber harvests drop to less than one-fourth of federal forest sustained yield capability). Several independent assessments should be made of the efforts of each alternative on minor forest products, fisheries and timber and their costs, values, impacts and employment.

Restricting forestry practices on federal forests in the Pacific Northwest is claimed to enhance its attractiveness for new businesses, residents, and tourism opportunities. The DSEIS support for tourism mistakenly considers the low-paid and seasonal tourism-related jobs as a viable substitute for high-paid and less seasonal forest industry jobs. Not even the DSEIS team members believe that this will provide any meaningful offset to the losses in real wealth, standards of living and social fitness caused by the Administrations proposal (DSEIS, FEMAT VII-71).

Tourism is largely dependent on roads and access to the forests. Where logging receipts do not pay for road maintenance, costs of maintaining roads for tourists will be high. In addition, the tourist season generally coincides with the fire season in the Pacific Northwest. The "old growth" condition will have a high fire danger. An independent assessment needs to be made of the total costs of road maintenance and fire protection relative to various amounts of tourist income and tourist appeal for each alternative.

The DSEIS ignores the adverse impact on game populations that will result from the management emphasis to create and preserve late successional forest types.⁷ This diminishes consumptive use benefits of wildlife. An estimated change in big game and hunting economic impacts needs to be assessed for each alternative.

The DSEIS claims that reduced timber production from federal lands will be compensated by increases in forest investments and management on non-federal lands. Nothing is said of the fact that decreased federal harvests will encourage departure from sustained yield harvest of timber and non-timber outputs on non-federal lands (and other forested regions of the world), creating precipitous drops in timber production in the future and diminishing long-term sustained productivity for the region, nation and the world. Global trade models (e.g., CINTRAFOR, University of Washington College of Forest Resources) allow projections of locations of increased timber harvest elsewhere in the world, and increased use of substitute

⁷/ Adams, Alig, et.al. Western Washington Timber Supply Study, University of Washington, 1992.

materials with various levels of harvest reductions. These tradeoffs need to be explicitly stated and calculated for each alternative.

Forest industry employment reduction data presented in the DSEIS do not account for total primary and secondary jobs and family support which are true measures of economic and social impact of the current and foreseen severe timber reductions in the region.

The DSEIS needs to assess and describe the secondary job losses for each alternative. The DSEIS ignores the urban dependency on basic industry support from rural areas, the sourcing area of wealth - - the forests, fields, mines, wells and the seas. The effect of current as well as foreseen timber shortage on building material costs to consumers is not adequately considered in the DSEIS. These cost changes need to be calculated for each alternative.

The DSEIS suggests that log shortages in the Pacific Northwest can be mitigated by imports from other Pacific Rim countries. This prospect will have impact on forest lands of foreign source areas, and the DSEIS must disclose what they might be. The DSEIS needs to describe the potential increased forest harvesting outside of the United States, where it will come from, and the potential ecological consequences based on the best available information (i.e., CINTRAFOR Global Trade Model) for each alternative. In a related matter, the DSEIS gives no consideration to the potential risk of introducing forest insect and disease pests that would accompany increased log imports. The risks of introduced pests and costs of avoiding those risks needs to be assessed for each alternative.

COMMUNITY IMPACTS

The objectives of the Social Assessment (Assessment) stated in the DSEIS are as follows:

1. Describe the nature and distribution of the social values and uses found in the range of the northern spotted owl.
2. Describe how these values and uses would be affected by the management options.
3. Identify how different constituents are affected by the changes stemming from the options.
4. Identify opportunities or strategies for dealing with the consequences for people.
(Appendix A, page VII 4-5)

The Assessment does not adequately address *any* of these objectives. Presumably objectives 1 & 2 were designed to measure the specific benefits from forest use that are sacrificed and gained by the proposed change in federal forest policy and management, and provide some quantification of cost/benefit using a social value scale. The Assessment fails to define forest

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benefits in anything but the most vague terms and does not measure and quantify those benefits. More specific quantitative measures need to be done for each alternative.

Objectives 3 & 4 should define in specific terms the full social price tag for the proposed changes in federal forest policy and management. The Assessment fails to meet these objectives as well. The Assessment focuses on a description of "attitudes" and "perceptions" about federal forest policy and fails to identify and measure the potential social consequences of the Administration's proposal to the U. S. citizens and to the world community.

The Assessment admits its own inadequacy by calling for "[a] comprehensive, region wide assessment...that...is needed to analyze the effects of any selected option for federal forest management..." (Pg. VII-10). It also states that "...this social assessment report should be viewed as illustrative of what can be done, rather than as the source of definitive answers." (Pg. VII-78)

The Assessment should be neutral concerning the promotion or rejection of proposed change. It is *not*. The Assessment actively promotes change in federal forest policy and denigrates management choices of the past. A more objective assessment needs to be done. The Assessment states that "...resource allocation decisions are fundamentally political choices amongst values..." (Pg. VII-17) and that "...politics is the forum for choosing among values and promoting some values over others." (Pg. VII-34) The Assessment acknowledges that the *perceptions* of constituents drives politics and, as to forest management, those perceptions are very often uninformed. But from here the Assessment takes a hard turn and suggests that ignorance of the facts is *acceptable* in the debate over federal forest policy. Misconceptions and uninformed opinions are to be considered as valid social judgments. Public opinion surveys which detect *unspecified* "concerns" or "worry" about the "environment", are interpreted as justification for specific radical change, such as the Administration proposal. This interpretation needs to be explicitly justified for each option so that the merits can be evaluated.

The Assessments survey of "community capacity and consequences" (DSEIS, FEMAT VII 55-60) shows that *all* communities surveyed (except one small tourist town) indicated that a positive impact and the least negative consequences would flow from a return to harvest levels of 1985-1987, the highest harvest level option included in the survey. This survey was conducted before the "options" were known, and of course the 1985-1987 harvest level is substantially higher than *any* of the Administrations 10 listed "options". This also illustrates that the list of options presented within the DSEIS was incomplete given the requirements of NEPA to adequately disclose the full range of possible alternatives and to give the reasons why that list of alternatives may be narrowed.

PART III
Forest Ecosystem Management:
An Ecological, Economic and Social Assessment Report
of the
Forest Ecosystem Management Assessment Team (FEMAT)

Introduction

The FEMAT report demonstrates a tremendous effort, given the complexity of the issues, the large number of experts involved, and the short period of time in which it was done. It purports to document a wide range of scientific opinion in the public policy context of the Endangered Species Act (ESA), National Forest Management Act (NFMA), Federal Land Policy and Management Act (FLPMA), and the National Environmental Policy Act (NEPA). The report represents an important first step toward the resolution of the Pacific Northwest and Northern California Forest impasse even though it falls short of resolving the issue.

FEMAT participants and many SAF members recognize many of the limitations of the study. In the sections that follow, we call attention to a number of them by way of added or shifting emphasis, thus identifying useful areas of required future inquiry, follow-up, and process improvement.

Ground Rules for FEMAT and Revised Legislation

FEMAT participants identify in the report, and verbally reaffirmed on many occasions, the limited "decision space" afforded the team. President Clinton outlined in his statement of mission (FEMAT excerpts, pp. 3-6) the tasks of the three forest conference working groups. Prominent among them were the "human and economic dimensions of the problems." These larger concerns were voiced many times by individual conference participants (FEMAT Appendix VII-A). In reality, the "outcome" of the Forest Conference was largely dictated by consideration of biodiversity and species viability, both of which have strong legal roots in NFMA, FLPMA, NEPA, and ESA. The human and economic dimensions of the issues (mainly involving timber, but mining, grazing, consumptive terrestrial wildlife, and other resources as well) were superficially considered only after biophysical constraints were met. Only Option 9 offered a small window toward social and economic considerations. The Society of American Foresters believes that the management of natural resources must significantly account for other than just biophysical resources like biodiversity and species viability.

A related matter is that FEMAT emphasizes extreme caution to avoid perceived irreversible consequences. Thus, FEMAT gives precedence to resolving questions of biodiversity and species viability. Whether resolving biodiversity and viability questions should be overriding, or what level of risk is acceptable, needs to be questioned and decided.

Legislative and regulatory impediments are displayed prominently in Forest Conference documents (FEMAT, chapter 2, 96-98; 104-105), and the DSEIS (Appendix E-19). They are also implicit in a number of concerns we have voiced here. The climate is not promising now for legislative and regulatory change. Nevertheless, scientific and professional groups should collaborate in examining opportunities to develop tentative proposals, thus positioning themselves to participate in future Administration and Congressional initiatives to resolve ambiguities and inconsistencies in legislation and regulations affecting natural resource policy and management. The basic environmental policy framework and legislative authorities of land management agencies should be examined with a view to enlarge and clarify the decision space now available to the agencies within which to develop and implement forest management plans.

Other options need to be identified and considered, particularly some that offer real options to improve the social and economic well-being of people. Such considerations may not simplify the planning and decision-making process, but will give more people a more equitable stake in the outcome.

Scientific Underpinning

The FEMAT Team Leader readily acknowledges that the FEMAT Report is not a scientific one, but a set of land-management alternatives requested by the President from a group of scientists. A problem in the report is that the distinction between well substantiated information and untested hypotheses is often blurred. The report acknowledges freely that much more information is needed (FEMAT, chapter 8, pp. 22-23). The authors also acknowledge that science alone cannot and should not resolve the involved social, economic, and political issues.

Three parts of the FEMAT report are based on seriously limited information, and if in error, all have sweeping consequences for biological, social and economic outcomes. The role here is for scientific and professional organizations to recognize the weak underpinnings for these areas and to encourage and participate in scientific and technical discussion and accelerated research on them. The problem areas are (1) aquatic and riparian ecosystems; (2) viability assessments and (3) landscape-level ecosystems management.

- Aquatic and riparian ecosystems (FEMAT, chapter 5). Riparian reserves set aside 0.62 to 2.88 million acres (FEMAT, chapter III, table 5) depending on the option selected. Furthermore, the riparian reserves have the capacity to deny access or render inoperable the adjacent matrix lands. Especially inadequate in our estimation, is the scientific basis to support the findings embodied in FEMAT Figures V-12 and V-13 (FEMAT Chapter V, p.

27). The information contained in these figures has far-reaching consequences for riparian reserves. We recommend that additional science be brought to bear on these issues as quickly as possible.

The overall FEMAT procedure was to develop options using one set of criteria and to evaluate them against another set, with sufficiency of habitat for individual species being the most prominent. While not ecosystem based, this approach was consistently followed for terrestrial ecosystems, but not for aquatic ones. While the document discusses the variables important to aquatic and riparian habitat structure and function, it defines options entirely in terms of reserves. When evaluating the options, key factors (two out of three equally-weighted variables) are simply amounts of reserved lands, and not some measure of ecosystem structure and function. Thus, options are evaluated largely on the basis of reserved area, without any reference to ecosystem structure or function. Additional science should be brought to bear on this problem as quickly as possible.

Questions of population genetics in salmonoids should to be addressed in greater detail, drawing on related work in evolutionary biology, forestry, and agriculture. Are all fish stocks significantly different genetically? Can fish stocks be genetically reconstructed? Can hatchery programs preserve genetic diversity even as they augment fish stocks? A related issue--what are other sources of salmonoid losses, such as sports and commercial fishing, dams, farming, and irrigation practices, marine mammals, and so forth? Where in this broad range of depredation losses are risks the greatest and remedial actions most cost effective?

An emerging positive development, in our estimation, are the studies of forest/fisheries interaction commissioned by the State of Oregon under direction of Professor Botkin of Santa Cruz University, and the study of cumulative effects by Professors Beschta and Boyle of Oregon State University--the results of these studies should be available in 1994. More such independent studies should be commissioned for this and related questions.

- Species viability assessment. FEMAT extended questions of species viability beyond spotted owl, marbled murrelet, and salmonoids to include other plant and animal groups. Utilizing panels of experts on various taxa (FEMAT, chapter IV) assessed the potential for survival. Given the time available to FEMAT, we are hard pressed to suggest a better alternative, but this is another example of the problems created by a 60-day "decision space" allocated to the FEMAT effort.

Nevertheless, concerns remain that the viability assessments were highly judgmental and subject to strong protective biases that experts often display toward their areas of interest. Independent inquiries and accelerated research into questions of species viability and

biodiversity are needed. Beyond setting aside representative ecosystems, we think that inquiries should be expanded to include options for (1) off-site conservation for important and vulnerable plant and animal species; (2) techniques to restore species on already degraded sites; and (3) biotechnical opportunities to capture especially important characteristics of plants and animals.

• Ecosystems Management. FEMAT Team Leader Thomas has said of ecosystems management, it "is not going to be simple. It's not going to be cheap." (FEMAT Appendix VII-A, p. 88). Ecosystems management may be appealing, but as the Scientific Analysis team reported in March 1993, the framework for ecosystems management simply does not exist.

Ecosystems are generally seen to cross ownership boundaries and to be dynamic. Options to manage ecosystems, terrestrial and aquatic, should recognize this and define desired conditions in terms of structure and function. Options explored by FEMAT were, however, largely derived from individual species concerns, cover only Federal lands, and are expressed principally in terms of land use rather than resource condition. While this may reflect another goal to meet existing law and policy, the use of ecosystem concepts to derive options, rather than just evaluate them, was never engaged by FEMAT, a serious fault.

Professional and scientific organizations can help resolve issues such as these by defining how and at what level ecological principles should be applied to protect biological diversity across the complex mosaic of forest ecosystems. Included would be defining an objective process for identifying options for incorporating late-successional forest reserves as part of a broad set of ecologically-based alternatives for protecting biodiversity while allowing flexibility for a wide array of forest resource uses. In short, there is no consensus about what ecosystem management really is, much less how to do it.

Ecosystem vs. Species Preservation

Managers of public forestlands and resources must face the issue of managing ecosystems vs. managing individual species for their preservation. To be sure, the two approaches are not independent--managing ecosystems requires consideration of individual organisms, and managing for a species requires assessments of habitats which exist in an ecosystem context. Still, it is obvious that the list of organisms eligible for listing under the ESA (FEMAT, chapter IV) could be incredibly long, and that wholesale gridlock on all federal lands, and many private lands as well, is likely if single species preservation is pursued to its full extent. Additionally, we must consider that the ESA and other environmental legislation applies to lands outside the Pacific Northwest, few of which have yet to feel the impacts visited on this region. Therefore, emphasizing an ecosystem approach to managing public forestlands and resources probably better serves the long-term needs of the nation than a single species approach.

Even though an ecosystems approach does not guarantee the viability of all threatened organisms, it does give most (if not all) a chance for survival. The approach also allows for discovery of or knowledge about unknown or poorly understood organisms and ecological processes. FEMAT recognizes the practical impossibility of providing for all organisms that have been or will be discovered and suggests that this issue be addressed.

Discussions and inquiries are needed on questions about ecosystem vs. species protection. Much information about natural areas protection and management exists going back to the 1920s. The implications apply to areas external to the Pacific Northwest, which already has the strongest program in the coterminous United States for protecting a variety of ecosystems (research natural areas, Nature Conservancy lands, botanical and geological areas, as well as state and national parks, wildlife refuges, and components of the National Wilderness Preservations System). Many advantages lie in setting aside representative ecosystems in the Pacific Northwest (and elsewhere in the nation) that represent habitat varieties. To be sure, there should and will be efforts to save important and highly visible organisms (i.e., California condor, woodland caribou, black-footed ferret), but the overall emphasis should be toward ecosystems rather than individual species protection. An ecosystems approach to managing for biodiversity and species viability will likely require new or modified legislation.

Adaptive Management Areas (AMAs)

The AMA concept, limited by FEMAT only to Option 9, the President's Forest Plan, is attractive, if AMAs function as intended (FEMAT, Appendix Chapter VIII, pp. 17-22).

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on President Clinton's
Forest Conference Documents*

These include innovative silvicultural approaches to maintain forest ecosystems, developed with strong community participation. The emphasis should be on testing new approaches to forest management. Monitoring and feedback loops are intended to modify practices in old growth and riparian reserves that are not already set aside under statutory or administrative withdrawals. SAF has 3 major concerns: (1) that adequate funding will not be forthcoming to carry out the work for which AMAs are established; (2) that too narrow a range of options will be considered for that work; and (3) that attempts will be made to freeze the land status of current old-growth reserves and riparian zones, and disallow in them problem intervention through active management. Professional and scientific organizations should actively support the AMA concept in all its dimensions--funding, experimentation, feedback, and modification of practices to meet biodiversity and species viability criteria.

The concept of landscape level experiments is useful. One of the great shortcomings of the current knowledge base is that most experimental work has been done at the organism and stand level, not at the landscape (or watershed) level. There must be well-designed research to test hypotheses on landscape level practices. Small scale studies are not sufficient to provide the information needed to measure and to understand forestland and resource management effects in an ecosystem context at landscape levels.

Monitoring

There are repeated calls for monitoring of various practices in FEMAT and in the DSEIS. However, the track record on monitoring by federal resource agencies is abysmal. Well-intentioned long-term monitoring studies are entered with enthusiasm only to fail for a variety of reasons including lack of follow-up, shifts in agency priorities and funding, and faulty design that meets neither statistical rigor nor legal requirements. Those parties engaged in new monitoring efforts must be aware of these problems. Monitoring programs should be addressed with all of the rigor required of long-term scientific studies.

Land-Use Planning

There are repeated calls in the several Forest Conference reports for a new round of land-use planning, at the watershed level. Such planning will be far more complex than the costly and protracted forestland and resource planning exercises (for the national forest system) under NFMA. The temptation for on-the-ground professional people, academics, and the research community will be to push state-of-the-art practices to enhance the role and capability of technology and information systems to solve the issues. Interest groups will encourage detailed planning, and if the past indicates future trends, such initiatives could delay rather than advance decision making. No matter how dedicated, it is a difficult task for

the general public, agency leaders, and elected officials to organize, absorb, and analyze all of the information available and presented to them by planners. Shifting from forest stand-level management planning to a more ecosystem/landscape-based approach will not make the task any easier.

Professional and scientific organizations should collaborate with each other and revisit issues of land-use planning. Are there less costly techniques to identify the issues and to present them for public discussion? How much information is enough? At what cost? What is the stability of past planning exercises, and what are the lessons for the protection and management of resources? Finding ways to reduce costs of land-use planning, could liberate funds for on-the-ground use to resolve forest health and related problems.

Non-Federal and Private Lands

FEMAT understandably avoids discussing the consequences of adopting the President's Forest Plan for non-federal public lands and for private lands, in the Pacific Northwest, elsewhere in the nation, and globally. Land management planners and managers must be alert to the significance of this omission. While FEMAT was not chartered to handle this matter, the Administration nevertheless has an obligation to recognize that adopting the forest plan (Option 9) has significant impacts on environmental quality elsewhere in the nation, and globally as well. These impacts must be disclosed.

The primary effect of the FEMAT report on non-federal lands revolves around the question of what contribution is required of non-federal lands to provide for conservation and recovery of the northern spotted owl, using the contribution from federal lands as described in the FEMAT report as the foundation.

The U. S. Fish and Wildlife Service will likely address the contribution from non-federal lands through a proposed section 4(d) rule authorized by the federal Endangered Species Act. this proposed rule will likely address the contributions required from non-federal lands needed to meet the conservation objectives for the northern spotted owl. It will also likely describe the conditions under which non-federal landowners may be relieved of the incidental take prohibitions of the northern spotted owl resulting from specific land use activities.

One of President Clinton's objectives is to "...ease restrictions on timber harvest from certain non-federal lands..." by improving management of federal lands. The Endangered Species Act requires non-federal landowners to only avoid a take of a listed species. The U. S. Fish and Wildlife Service needs to assess what contributions are needed to meet the President's objectives, and comply with the ESA. Any 4(d) rule should clearly reflect these objectives.

Agency Coordination

The Agency Coordination Working Group Report (DSEIS Appendix E, and FEMAT Chapter VII, pp. 102-114) correctly points out many of the reasons that coordination among agencies has not worked. But the remedial actions to correct shortcomings are less than convincing. An important missing ingredient is an administrative and legislative determination or commitment to make interagency coordination work. Terms of reference for interagency coordination groups need to be precise and spelled out in formal documents that define objectives, procedures, authority to make decisions, and termination procedures, and be approved by top-level Administration officials, with knowledge and approval (if necessary) by legislative leaders. Independent (external) studies should be encouraged of interagency (and intergroup) coordination and collaboration. What ingredients led to success or failure? Sufficiency provisions on the issues addressed by the interagency task forces may be necessary considering that the capacity of disaffected individuals or groups to avoid resolution of conflict under current ground rules is virtually unlimited.

Funding

Reports of FEMAT and the other two task forces described a complex and strongly intra- and interconnected system of recommendations; the failure of any one part will reverberate through the entire program.

Not the least of these issues is funding. The Working Group on Labor and Community Assistance proposes a \$1.2 billion program over a 5-year period, but it appears to be minimal. We cannot assess the validity of this number. Our concern is that the impacts on people and local communities will be substantial and painful. FEMAT presents no explicit description of what appear to be inordinately adverse social and economic impacts of major proportions for people and communities in the region covered by the plan. Funding levels recommended by the working group seem totally inadequate to account for social and economic readjustments planned for and needed by affected communities.

Another budget aspect (DSEIS Appendix E, pp. 23-26) beyond people and communities involves the tasks of planning, coordination, research, and outreach identified in FEMAT. These budget estimates were not available to SAF at this writing, but professional and scientific organizations must remain alert to support appropriate levels of funding. Given tight budgetary times, it will be tempting for the Administration and Legislative branches of government to reduce and/or delay, research on traditional programs (forest protection, tree improvement, harvesting and utilization), the results from which are essential to other public agencies and small woodland owners who will be called upon to provide more of the goods

*Regional SAF Comments and Position
on President Clinton's
Forest Conference Documents*

and services no longer available from federal lands in the Pacific Northwest. The same reasoning about budget shifts and reductions can be applied to other activities of the several agencies involved in implementing various aspects of the President's forest plan.

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11/8

UNITED STATES
DEPARTMENT OF THE INTERIOR
ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS
WASHINGTON, D. C.

Will Stoll -

I couldn't remember whether I previously had sent you a copy of these comments on Option 9 + FEMAT from the Scientific Advisory group. Their comments on SO-11-40 are not helpful. There are also included various issue papers for the FEMAT EIS that, at least in one case, highlight the problems that the 4-d rule could generate for viability ratings for Option 9. Enjoy!
Dan Barry

DISPERSAL HABITAT AND MANAGED AND RESERVED PAIR AREAS
Situation assessment
10/24/93

DISPERSAL HABITAT

Background

A discussion of the evolution of dispersal habitat direction in option 9 serves as a useful introduction to this topic. Option 9 was simply one of 10 options developed by FEMAT. As a working hypothesis, FEMAT specified that the 50-11-40 rule would not be applied for dispersal habitat in option 9. The hypothesis was that the dispersal habitat requirement might be satisfied by other provisions of the option, mainly because of the presence of the riparian reserves. However, the team never stated that there was a substantially new standard for dispersal habitat. Therefore, the success of this working hypothesis can only be judged by reference to the 50-11-40 standard. ?

The habitat assessment panel served as a first test of this working hypothesis. The owl panel provided a reasonably high rating for the likelihood of maintaining well-distributed habitat conditions for owls (83 percent) under this option. (It is worth noting that this was the mean of 2 scores of 100% and 2 scores of 80-70%). However, the "power" of this test was not good because the panel notes reveal that the panelists were uncertain how option 9 would affect dispersal habitat.

A second test of the working hypothesis came with the estimation of "PSQ" under this option. Removal of the 50-11-40 rule raised the PSQ by 10-15%. This suggested that the condition of 50-11-40 would not be met in some locations if the rule was removed, i.e., even with the riparian reserves, the 50-11-40 rule was still needed if the objective was to maintain a matrix landscape in 50-11-40 condition. If the 50-11-40 rule were essentially superfluous, then its removal would not have had an effect on PSQ.

FEMAT did not have time to do further analysis of the likely effects of 50-11-40 removal. The owl panel results were allowed to stand as the final assessment result in both the FEMAT document and the draft EIS.

Subsequent to publication of the draft, the EIS team did further analysis of likely landscape condition as part of their biological assessment. The basis for the assessment was a comparison of option 9 to the final draft recovery plan. The assessment looked at the acreage in "11-40" condition in each land allocation at the current time, and the likely amount of 11-40 condition in those allocations in the future. The assessment focused on provincial totals. The information was subsequently reviewed by a group consisting of former FEMAT members and members of the biological opinion team. The basic conclusion of that group was that, in many areas, it was likely that we would not meet 50-11-40 conditions for some portion of the next 30 years. Some specific areas were, however, identified where it was more likely that the 50-11-40 condition would be sustained during the "transition"

period. These were the Olympic Peninsula; the eastern Oregon Cascades; Forest Service lands in the Oregon Klamath; the north half of the Oregon Coast; and all of California (based on the 180 year rotation). Over the long term, it appeared likely that the allocations of option 9 could provide for the 50-11-40 condition in all or most areas.

Discussion

The rough analysis reported here has many weaknesses. Data was only viewed at the provincial level, and estimates were not available of the rates of harvest of 11-40 habitat in the matrix versus rates of regrowth of that habitat in riparian reserves and other allocations. However, as a first approximation, the finding is probably correct that the 50-11-40 guideline will not be met everywhere as we move from current to future conditions.

The importance of this failure is difficult to interpret for a number of reasons. First, more site specific analysis would be necessary to determine what specific areas would fail to meet the 50-11-40 guideline. This analysis would likely take several months on Forest Service lands. Less time would be necessary on BLM lands because a similar analysis was already undertaken for the BLM planning process.

Second, the 50-11-40 rule has always been acknowledged to be largely professional judgement. The "11-40" portion was based on some empirical information, but the 50% rule was largely judgemental. For that reason, a quantitative analysis of the results of failing to meet the rule is impossible.

Despite the nature of the rule, however, it has been vigorously defended in several public arenas, and there is no other accepted guideline to provide for dispersal habitat. The type of information that would be necessary to revise the guideline through adaptive management was described in the Final Draft Recovery Plan (pg. 259-263). None of that information has become available. It would be difficult to support the abandonment of the rule without supporting rationale or a replacement guideline. *

Concern over the lack of the 50-11-40 guideline may also be viewed from another perspective. The PSQ for option 9, without the guideline, is approximately 1.2 billion. The PSQ for the recovery plan surrogate (option 7) is approximately 1.5 billion. With a lower harvest level, it stands to reason that habitat conditions will be changed more slowly under option 9 than under option 7. This analysis is admittedly simplistic, since some of the harvest from option 7 may come from areas little used by owls. However, the analysis does suggest that the concern over dispersal habitat in option 9 is likely one of distribution and timing, not total amount.

Other features of the option may tend to further mitigate concern over dispersal habitat. Key watersheds may not support much timber harvest activity in the near future, thus retaining their current landscape condition. Conversely, this could accelerate the negative effects in other parts of the landscape if the key watersheds'

"share of the cut" is taken from other areas over the short term.

Recommendations

At this time, there is no justification for stating that the 50-11-40 condition is unnecessary. Failure to require 50-11-40 could lead to reduced juvenile and adult survival during dispersal. The severity of that problem is, however, difficult to predict since we do not have estimates of rates of habitat change for specific locations.

Any resolution of this concern is likely to have some cost. If the 50-11-40 guideline is not reinstated or replaced, there is increased risk to the owl population and increased vulnerability of the plan in the legal arena. The likelihood that the plan would satisfy recovery requirements would be reduced. On the other hand, reinstatement of the 50-11-40 rule would cause some reduction in PSQ. We do not currently know the magnitude of the reduction.

It is not SAGs role to recommend specific changes to the preferred alternative. However, if the final preferred alternative is to be responsive to spotted owl requirements, including recovery, it must contain one of the following: (1) a reinstated 50-11-40 rule; (2) a substitute guideline for dispersal habitat; or (3) an explicit and detailed statement explaining why such a guideline is not needed. At the current time, we do not know what the basis would be for either a substitute guideline or for a statement explaining relaxation of the guideline.

If time allows, additional information could be gathered to help understand the implications of the issue:

1. Initiate more detailed site specific analysis to determine how serious the lack of compliance with 50-11-40 would be under the current plan.
2. Initiate analysis to determine the cost of reinstating the 50-11-40 rule. There is some reason to believe that it may be quite low. No further reduction in PSQ may be necessary in California because of the influence of the 180 year rotation. Likewise, costs may be quite low in the Olympic Peninsula, eastern Oregon Cascades, and Forest Service lands in the Oregon Klamath. (It should also be noted that managed and reserved pair areas are counted toward the 50-11-40 guideline. The cost of applying the guideline would not be strictly additive to the cost of establishing those areas if a decision was made to reinstate them).
3. Assign a team to look for innovative analytical techniques that could be used to draw additional information about dispersal from existing data. (We should caution that this has been considered many times without significant success). The Final Draft Recovery Plan (pg. 259-263) contains a discussion of the types of information that would be useful in modifying the 50-11-40 guideline.

We urge that this concern not simply be dropped. The justification for dropping 50-) *

11-40 is currently inadequate in our judgement, and further analysis and discussion is needed to determine the implications of alternative resolutions to the issue.) *

RESERVED AND MANAGED PAIR AREAS

Background and discussion

Reserved pair areas are small Late Successional Reserves that are intended to supplement the larger reserves. They are a legacy of the original Interagency Scientific Committee report and the Final Draft Recovery Plan for owls. The objective of these areas was to supplement the population of owls in large reserves where that population was not adequate to fully meet the design criteria of the spotted owl strategy. Managed pair areas are similar but are Managed Late Successional Areas and have an additional objective of serving as a safeguard against large-scale disturbances in the reserves. In the FEMAT report and draft EIS, reserved and managed pair areas were not included as late successional reserves or managed late successional areas in Option 9. The Scientific Advisory Group (SAG) was asked to consider the implications of dropping the areas. Review of this question was done by physiographic province. In eight of the 11 physiographic provinces, we concluded that the areas had been largely replaced by other allocations. In 3 provinces, the situation needs further attention. Those 3 are discussed below.

OREGON COAST RANGE

SAG reviewed the biological situation where these areas had been designated on BLM lands. The Designated Conservation Areas (now Late Successional Reserves) that were to be supplemented by the reserved and managed pair areas did not change substantially from the final draft spotted owl recovery plan to the FEMAT report. Consequently, the conditions that needed to be supplemented were not changed. SAG concluded that the reserved and managed pair areas should have been retained. There was also reason to believe that many FEMAT members believed that these areas had been retained through the BLM plans, and that this belief may have been translated to the members of the viability panel. In the northern part of the Coast Range, areas that had previously been reserved or managed pair areas were largely included in late successional reserves, and the reserve system was substantially strengthened from that of the recovery plan. Therefore, no additional action is needed on those areas in the final EIS.

SAG also reviewed the small DCAs that acted as connectors between the Oregon Coast Range and the Western Oregon Cascades in the final draft of the recovery plan. It appears that these areas were intentionally dropped in the mapping of Option 9, possibly because they were small and contained no known pairs of owls. The recovery team had determined that these areas would play a key role in connectivity of the provinces.

EASTERN WASHINGTON CASCADES

The largest number of managed and reserved pair areas had been designated in this

province by the spotted owl recovery team. Two reserved pair areas containing 4 activity centers and 12 managed pair areas containing 23 activity centers had been identified. The late successional reserve system in Option 9 resulted in the elimination of most acreage from 8 of the managed pair areas and 2 of the reserved pair areas. Portions of the surrounding late successional reserves also contain fewer spotted owl activity centers and nesting, roosting, foraging (NRF) habitat than did the corresponding designated conservation areas. This results in a Congressional and late successional reserve system in Option 9 that actually contains 68,000 fewer acres of spotted owl NRF habitat than did the DCAs, managed and reserved pair areas in the recovery plan. Option 9 does include 38,000 acres of NRF in adaptive management areas in this province, and 40,000 more acres of NRF in riparian reserves than did the recovery plan. However, the effectiveness of these allocations for owls is not demonstrated. A total of 93,700 acres of NRF habitat is left in the matrix in this province under Option 9, compared to 101,700 acres under the recovery plan. Management of those acres (and other matrix lands) would have been guided by the 50-11-40 standard under the recovery plan. No comparable provision is made for those acres under Option 9.

According to the Washington Department of Wildlife, 138 owl activity centers are protected in the Congressional reserves and late successional reserves in the eastern Cascades under Option 9, where 184 activity centers had been protected in Congressional reserves, DCAs and managed and reserved pair areas under the recovery plan. (These numbers include 1992 owl survey data).

Under the recovery plan, the managed pair areas in this province had been intended to both supplement deficiencies in the large reserve system and to provide insurance against catastrophic loss of owl habitat. This recommendation was based on the conclusions of Agee and Edmonds in the recovery plan that "the East Cascades subregion is the region most at risk, and significant catastrophic disturbance already may be underway". Direction in the recovery plan provided for significant active management in these areas so that they might move toward a condition that was less at risk but still support owls. It was thought that they could form the cores of replacement reserves if the major reserves suffered catastrophic loss of habitat and owls from fire.

Elimination of these areas from Option 9 appears to have been the clear intent of FEMAT, but there was honestly little discussion of the issue and no rationale is provided for their elimination. As a consequence of the elimination of the areas, the system of reserves will not receive supplementation where it is deficient, and the ability to buffer catastrophic loss in the province will be reduced. Catastrophic loss in this province could have effects on owls in the I-90 corridor and in the western Cascades. We have no way of quantifying the increase in risk. Loss of the managed pair areas also could eliminate much of the owl population from the eastern fringe of the range, which would be considered undesirable by conservation biologists. Such fringe areas may serve as centers of genetic adaptation, and this particular area does support owls that appear to exhibit different patterns of habitat use and productivity

than other owls in the range. A higher proportion of activity centers in this area of the mixed-conifer zone support reproduction than do activity centers in other parts of Washington. Also, the average elevation of the managed pair areas was lower than the average elevation in the large reserves.

CALIFORNIA CASCADES

The California Cascades has been identified as an area of concern in previous plans for spotted owls. There are three primary reasons for concerns. First, the owl density in the area is naturally low. Second, habitat is at risk of large-scale disturbance. And, third, this area serves as the connector between the northern and California owl populations. Because of these concerns, the Final Draft Recovery Plan had recommended protection for virtually all owls in the province, both currently known and future discovered. This included designation of 2 managed pair areas at the current time and an unknown number of additional areas in the future. This also corresponded to the previous recommendation of the ISC which had required the protection of future discovered sites in much of this province. Option 9 did not make provision for either current or future-designated managed pair areas, and thus provides for fewer pairs of owls in this province.

Recommendations

OREGON COAST RANGE

Discussions among SAG, the EIS Team, and the BLM resulted in a recommendation that both the managed pair areas and the small DCAs be reestablished. This recommendation was based on the original Recovery Plan justification for these areas and the difficulty in interpreting FEMAT direction for them.

To mitigate the possible impact of these areas on PSQ, the areas will be retained as connectivity blocks rather than old growth emphasis areas. This will be reflected by clarified direction in the final EIS concerning the portions of BLM plan direction that are being retained.

EASTERN WASHINGTON CASCADES

SAG recommended that the need for these areas be reflected in the final EIS and offered the following possible alternatives.

1. Reinstate the managed pair areas as they were described in the recovery plan. This alternative would be the most robust from the standpoint of owl recovery, but would have some substantial effect on PSQ. Magnitude of that effect is expected to be small from a Regional perspective but relatively large from the perspective of the Wenatchee National Forest. Direction would allow some silvicultural activity in these areas with the overall intent to retain the activity centers but reduce risk of catastrophic loss.
2. Stipulate that forest plans would adopt provisions for these areas. This alternative would leave the initial FEMAT option intact, but would pass the burden of accounting for these areas to the individual forests.

3. Have these sites designated as adaptive management areas. This alternative would actually be reasonably close to the original intent of the recovery team, i.e., to give the forests some latitude to learn how to manage spotted owl habitat successfully. However, these small areas would not conform to the criteria for large adaptive management areas that include entire watersheds.
4. Leave Option 9 as it is and accept the risk level.

The EIS team tentatively decided to adopt the 4th alternative. SAG wants to insure that it's clearly understood that this alternative (1) leaves fewer owls in a protected status in the province than under the Final Draft Recovery Plan; (2) interacts with the elimination of the 50-11-40 guideline for management of habitat that remains in the matrix; and (3) is likely to reduce the ability to consider Option 9 as a recovery plan. Also, it is not clear that these implications were understood by the spotted owl assessment panel. The Late Successional Reserves in this province are larger under Option 9 than they are under Option 7 (Recovery plan surrogate). However, because of their location, they actually contain fewer acres of spotted owl habitat than do the reserves of Option 7. Since the panelists only had maps of Option 9, and no tabular data, they may have had the impression that Option 9 would provide more protection for owls than did Option 7.

CALIFORNIA CASCADES

There was no rationale stated for the elimination of either the known or future sites. Connection between the northern and California owl populations is an important concern. The cost of retaining managed pair areas in this province ought to be relatively low because of the stipulation of a 180-year rotation for the matrix. The intent of the managed pair areas could likely be met simply by appropriate application of the 180-year rotation.

Key Considerations for Schedule Extension

No Extensions: We will get the job done close to the court ordered deadline.

Comment Period Extension

Extension of comment period, does not help Final SEIS preparation because:

- we still will receive heaviest-hitting comments at end of new comment period.
- we will not have time to adequately respond to those.
- we will not be able to make any changes in Alternative 9 as a result of comments.

Extension of comment period will help the following:

- demographic data can be compiled.
- McKelvey model can proceed.
- 4(d) rule assumptions will be better known.

Final SEIS Extension

The critical variables are: (1) whether we have time to incorporate results of new information, and (2) whether we can make changes to Alternative 9 above the threshold of changing the viability assumptions. Any extension needed to help in making a more solid Final SEIS starts after the close of the comment period.

Extension of 1 to 3 months after close of comment period will;

- not allow time to incorporate needed changes to Alternative 9.
- not allow time to incorporate results of new data.
- allow us to respond better to public comments, increase public credibility.
- allow us to make some changes to Alternative 9, but none that change the viability assumptions.
- possibly allow interagency policy review.
- force needed modifications to be made by Regional Ecosystem Office (REO) after the ROD is signed.

Extension of 3 months or more after close of comment period will:

- allow time to incorporate changes to Alternative 9 and prepare sensitivity analysis.
Changes that should be made:
 - consider and revise land allocation boundaries.
 - determine mitigation measures for at-risk species and local endemics.
 - change ambivalent language in standards and guidelines.
 - change the 180-year rotation in California.
 - respond to changes that may be required in Biological Opinion (dispersal habitat, managed and reserved pair areas).
 - change non-Federal land assumptions based on 4(d) rule.
- allow for interagency policy review.
- allow implementation after ROD rather than immediate modifications by REO.
- allow incorporation of demographic analysis in Final SEIS.

October 24, 1993

Bob-

Attached are three items.

1. Key Considerations for Schedule Extension

Bullets that try to address pros and cons of various schedule options that are (or are not) being considered in Washington.

2. Memo from you to Tuchman

Identifies how we are proceeding under the current schedule and implications of extension. I dated it October 25, exactly 3 weeks since we raised the issue. Minor change from the draft you saw: viability of non-salmonid fish is not an issue -- we figured out an answer.

3. Policy Issue Papers

Policy Issue #1: No more dams.

Policy Issue #2: Alternative 9 as Recovery Plan

Policy Issue #3: Roadless areas

Policy Issue #4: New owl data and analysis

Policy Issue #5: Viability

Policy Issue #6: Risk of extirpation

Policy Issue #7: Biological Opinion and MPAs, RPAs, dispersal habitat

Policy Issue #8: Non-Federal lands

Let me know if you have any questions on any of this stuff. (503)228-1318 at home, (503)326-7669 at work.

A handwritten signature in black ink, appearing to be 'JMM' with a checkmark-like flourish at the end.



Interagency SEIS Team • (503)326-7883

October 25, 1993

Memorandum

To: Tom Tuchman

From: Bob Jacobs

Subject: Schedule Extension for the Final SEIS

This is a follow-up to our October 4, 1993, proposal to extend the schedule for the Interagency SEIS. Since no decision has yet been made, we thought it was appropriate to update you on the current status of the SEIS and the implications of not making a decision.

Current situation. The SEIS Team is assuming that no change will be made to the schedule. We are working long days, seven days a week, to prepare the Final SEIS. We intend to complete it close to the court-ordered deadline. We will respond in some fashion to all comments on the Draft SEIS, and we will prepare a refined Final SEIS. As we have previously stated, we feel that the Final SEIS will be easily challenged based on previous court opinions, but we are doing our best to fill some of the gaps. The following are some of the potential flaws we are trying to address.

1. New information: A comment letter received from 14 scientists pointed out the need to consider owl demographic counts that were conducted in 1992 and 1993, and analyze that data to determine owl population trends. This is new information available to the Federal agencies, that was not considered by FEMAT. The results will not be available in time for the Final SEIS, but the studies have been initiated. If we do not deal with this issue, we will be prone to the same criticism as the Anderson/Burnham defect raised by Judge Dwyer in his July 2, 1992, injunction.
2. Non-federal lands: The adequacy of the analysis of the cumulative impacts of actions on both Federal and nonfederal forest lands has been questioned as a potential NEPA-compliance issue. Another concern is the potential for changes to the impacts identified in the Final SEIS that will result from the decision that is made on the 4(d) rule for nonfederal forests.
3. Viability: Several issues surround the viability assessments that were the basis of our analysis.

- The FEMAT Report (at IV-45) describes the assumptions given to the viability panels in part as follows:

For this assessment, they were asked to assume that [landownership patterns and habitat conditions on nonfederal lands, habitat conditions outside the range of the northern spotted owl, and other environmental conditions caused by activities off federal lands] would be adequate to support a stable, well-distributed population of the species, if habitat on federal land was adequate to support such a population.

This may be inconsistent with the results of the upcoming 4(d) rule decision and with the results of the eastside analysis.

- No determination has yet been made as to what constitutes viability. FEMAT and the Draft SEIS identify only "probability of outcomes", but the leap of logic to what constitutes a viable population is left to the decision-maker.
 - Several vertebrate species and many invertebrate species are identified as potentially having a risk of extirpation. This appears to be in conflict with NFMA and the Endangered Species Act.
 - Viability assessment panelists are said to be publicly criticising the assessment process, the information they were given as a basis for assessment, and the conclusions drawn by FEMAT from their work.
4. No Monitoring Plan: A monitoring plan is currently being prepared under the direction of the Interagency Implementation Team. Lack of a monitoring plan was a focus of the plaintiffs in the court injunction and it is expected to remain a focus.
 5. Acreage changes, no PSQ changes: As a result of refinements in the maps based on corrections of lines and designations in each alternative, the acres in reserves and matrix have changed. However, due to the variables in the model predicting PSQ for the alternatives, and the modest net changes in each designation, the PSQ predictions remain within the range predicted by FEMAT.
 6. Alternative approach to ecosystem management: At least one alternative has been proposed to the reserve-based approach to ecosystem management that was the premise of FEMAT. This alternative is based on the use of silvicultural treatments to speed more biologically diverse forest structures. This alternative was considered but eliminated from detailed study in the Draft SEIS.
 7. Boundary changes: Numerous boundary adjustments to designations have been proposed and continue to be presented by the land management agencies and the public. Some of these are valid and legitimate, but require careful analysis, local input and verification of consistency with the intent of FEMAT.

Proposed Extension. If there is an extension of the time the SEIS team has to address these issues, we can prepare better answers. The more time we have, the better the answers, but there is a minimum time requirement to conduct the analysis required for the viability issue, to include the results of the demographic studies, to incorporate the monitoring plan, to prepare new maps, to recalculate the PSQ, to allow for a policy or technical or legal review, etc.

In any schedule extension, all of the basic components of Alternative 9 will remain - we are not creating a new alternative or expanding the range of alternatives. Any time that is available will be used to incrementally strengthen the document and therefore our position in court. Even if all these issues are addressed, however, there is no guarantee of a bulletproof SEIS when it is presented to Judge Dwyer.

We have received more than 60,000 comment letters so far, and anticipate significant, lengthy and substantive new issues to be raised in letters we could receive as late as November 5, since they may be postmarked as late as October 28. We know that these new comments will add to the list above.

We are well along the way to meeting the current deadline. An extension of the schedule at this point will require significant backtracking and revision of what we have already prepared. The estimates of time we provided to you on October 4, 1993, were based on a decision that week. We are now at the point of needing time to undo what we have already done in trying to meet the current deadline.

Policy Issue #1

Date: October 20, 1993 [revised Oct. 22, 1993 -- new language shown below in italics, deleted language in ~~strikeout~~]

Statement of issue: Exclusion of hydroelectric dams in *Tier I Key Watersheds* due to implementing the Aquatic Conservation Strategy under Alternative 9.

Background: Standards and guidelines LH-3 of the Aquatic Conservation Strategy state: "Locate new facilities outside of Riparian Reserves." It further states: "Hydroelectric facilities that must be located in the Riparian Reserves will be located, operated, and maintained to eliminate adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives."

Under section 4(e) of the Federal Power Act, the Secretaries of Agriculture and the Interior may prescribe conditions necessary to protect resources under their jurisdiction to the Federal Energy Regulatory Commission (FERC) during their licensing process. On Federal lands within the range of the Northern Spotted Owl, the standards and guides of the plan selected for implementation would prescribe those conditions.

Implications of decision: If we retain the language currently in the Aquatic Conservation Strategy that is part of Alternative 9, essentially no dams could be constructed on Federal lands in *Tier I Key Watersheds* within the range of the Northern Spotted Owl. This provides FERC with a one-time blanket "veto" for any new hydroelectric projects since there is no way to assure a project could meet the intent of the Aquatic Conservation Strategy.

If we change the language to acknowledge that there may be certain situations where a hydroelectric facility could be constructed with extensive mitigation measures as outlined elsewhere in the Aquatic Conservation Strategy, the decision to "veto" or not would be deferred to the watershed analysis, provincial planning or project approval level.

Proposed resolution by SEIS Team: ~~Defer the "veto" decision by rewording the standards and guidelines to require compliance with the Aquatic Conservation Strategy objectives as a priority rather than a requirement.~~ *SAG revisited the issue on Oct. 21, 1993, and changed the language to only apply to Tier I Key Watersheds. The SEIS Team will include this ambiguous language in the SEIS for Tier I Key Watersheds only. It will be left to the Regional Ecosystem Team and the individual units to sort out how it will be implemented.*

Policy Issue #2

Date: October 22, 1993

Statement of issue: Adequacy of Alternative 9 to serve as the Northern Spotted Owl Recovery Plan with respect to Federal lands.

Background: There is currently no approved recovery plan for the northern spotted owl. Former Secretary of the Interior Manuel Lujan ordered the preparation of a recovery plan, under the authority of the Endangered Species Act, and considerable work was performed to prepare one. However, a final recovery plan was never signed.

Secretary Babbitt has not yet determined the need for a recovery plan. Based on the Record of Decision (ROD) on the SEIS for the Federal lands, and the results of the 4(d) rule determination for non-Federal lands, the Secretary may require preparation of a recovery plan for the northern spotted owl. If he does, the selected alternative that will be implemented following the ROD should be adequate to serve as the basis for the recovery plan on Federal lands.

* The SEIS team proposed to the Scientific Advisory Group (SAG), that Alternative 9 be considered adequate as the northern spotted owl recovery plan with respect to Federal lands. SAG's response was that such a decision was outside the scope of their charter. The decision therefore becomes a policy call.

Implications of decision: If the ROD is silent on the adequacy determination, an entirely new effort could be required subsequent to the SEIS and the 4(d) rule determination, that could change the standards and guidelines and the land allocations for managing forests in the range of the northern spotted owl from those specified in the selected alternative.

this is not going to happen → The owl experts have not directly addressed this question. In fact, the Fish and Wildlife Service may yet make a determination in the Final Biological Opinion that Alternative 9 is inadequate as a recovery plan. If this is the case, or if we ask a group of owl biologists to make a consensus determination, it is likely that changes to the standards and guidelines or the land allocations would be requested, changing Alternative 9.

If the adequacy determination is made in the ROD, then the standards and guidelines and land allocations in the ROD will be implemented by the land management agencies as written and approved by the Secretaries of Agriculture and the Interior.

Proposed resolution by SEIS Team: We will include the following statement in the Final SEIS, with similar language to be carried over to the ROD: "Alternative 9 is adequate as the Northern Spotted Owl Recovery Plan with respect to Federal lands."

[NOTE: Ideally, we should do the same thing for marbled murrelets, but that would probably create an even louder howl from the murrelet experts. Should we do it?]

Policy Issue #3

Date: October 22, 1993

Statement of issue: FEMAT's requirement that roadless areas remain roadless provides a de facto new designation of Federal lands that were returned to multiple use management after their consideration as wilderness.

Background: The Aquatic Conservation Strategy (ACS) provides in part that "....no new roads will be constructed in roadless areas in Key Watersheds..." and that "Watershed analysis must be conducted in all non-Key Watersheds which contain roadless areas before management activities can occur within these roadless areas."

The Scientific Advisory Group clarified the intent of this as applying only to portions of inventoried roadless areas that would still qualify as roadless under the guidelines used to originally designate the areas as roadless (larger than 5,000 acres and still without roads). These lands had reverted to general multiple use management after they were inventoried for wilderness values and it was determined that they did not meet the wilderness criteria or were otherwise not designated as Wilderness Areas by Congress. They do not now have any special designation.

The Aquatic Group of FEMAT made this as a last-minute addition to the ACS, requiring the application of more stringent standards and guidelines to these lands than on other lands within Key Watersheds. There is little or no scientific basis for this standard and guideline.

Implications of decision: By adopting the Aquatic Conservation Strategy, the land management agencies must re-inventory those lands, and determine which still meet the criteria, then apply a different standard than already applies within Key Watersheds. This is a new and unintended use of the inventoried roadless areas that will perpetuate them under a new designation.

By dropping this standard and guideline, inventoried roadless areas will be subject to the land allocations (designations or matrix) and standards and guidelines of other Federal forest lands in Key Watersheds.

Proposed resolution by SEIS Team: To keep the Aquatic Conservation Strategy requirement for roadless areas, but clarify that it only applies to inventoried roadless areas.

Policy Issue #4

Date: October 23, 1993

Statement of issue: New northern spotted owl demographic data is available and should have been considered in the SEIS.

Background: A comment letter received from 14 nationally-recognized scientists pointed out the need to consider and analyze owl counts that were conducted in 1992 and 1993. This is new information available to the Federal agencies, that was not considered by FEMAT or the SEIS. The analysis based on the new information would be of two types.

The first is analysis of demographic data, which is basic information on birth rates and survival rates of owls. This data is being collected annually on many study areas within the owl's range. The data is analyzed to determine current population trends for individual study areas, then analyzed together to get a regional view of the species' stability. This analysis is currently underway and should be completed by mid-December 1993, depending on the availability of David Anderson, who has performed this analysis in the past. Anderson's participation in the analysis is critical, since his credibility has been previously established in court. He is not available until March 1994, but as a Fish and Wildlife Service employee, his priorities could be changed.

The second form of analysis involves modeling of changes in owl habitat; how those changes affect owl reproduction and survival; and how owls interact across the landscape. This analysis is used to predict the impacts on the owl of different management alternatives. It could be performed concurrently with the demographic analysis. An early estimate of the time required to complete this effort, using the McKelvey model, is 3 to 4 months, well past the scheduled release of the ROD.

In his July 1992 injunction, Judge Dwyer specifically cited the need to include new available information in order to make an informed decision. FEMAT was unable to include the 1992 data due to time constraints, and the 1993 data was not yet available.

Implications of decision: If we ignore the new data, we will be prone to the same criticism as in the Anderson/Burnham (yes, it's the same Anderson) defect raised by Judge Dwyer in his July 2, 1992, injunction.

Under the current schedule, we can complete the demographic studies (the more critical analysis) in time to make the information available in time to sign the ROD, but not in time for the Final SEIS. The McKelvey analysis would be ongoing at the time the ROD is signed, but not available until after the ROD. We will not have the opportunity to adjust our Alternative 9 if the results of the either analysis show we have problems.

Proposed resolution by SEIS Team: Include a statement in the Final SEIS that the studies are underway. We will proceed with the analyses and assure that the results are available to the decision-makers prior to signing the ROD.

Policy Issue #5

Date: October 23, 1993

Statement of issue: Implementation of Alternative 9 will result in the management of habitat that may not maintain viability of native vertebrate species as required by the National Forest Management Act (NFMA).

Background: The FEMAT charter asked them to develop alternatives that led to "maintenance and restoration of habitat conditions to support viable populations, well-distributed across their current range, of species known (or reasonably expected) to be associated with old-growth forest conditions." This standard exceeds existing law and regulation. NFMA says "habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species."

The FEMAT charter language corresponds to Outcome A as determined by FEMAT based on the results of their assessment panels. If a standard of 80% likelihood of achieving Outcome A is used, 30 vertebrate species would not meet the standard. If the standard is expanded to include an 80% likelihood of achieving either Outcome A or B ("habitat is of sufficient size, quality, distribution and abundance to allow the species population to stabilize, but with sufficient gaps in the historic species distribution on Federal land"), then three vertebrate species (salamanders) would not meet the standard under Alternative 9.

FEMAT did not make a conclusion on the definition of viability, appropriately leaving this determination to the decision maker. This determination should be made in the ROD, and should be based on a standard that is likely to be accepted in court. Viability determinations should therefore be made only on the vertebrate species, since they are the only ones covered by law.

Implications of decision: If 80% likelihood of Outcome A is used as the viability standard, it is unlikely that mitigation measures could be implemented to protect the 30 vertebrate species.

If the 80% likelihood of Outcome A or B is used as the standard, mitigation measures could be added to Alternative 9 to protect the three salamanders, and a rationale prepared to explain how we arrived at this conclusion.

Proposed resolution by SEIS Team: We will recommend language for the ROD to apply the viability standard only to vertebrates and to set it at the 80% likelihood of Outcome A or B and include a rationale for arriving at the basis for the standard. We will expand language in the Final SEIS to add mitigation measures for the salamanders .

Policy Issue #6

Date: October 23, 1993

Statement of issue: The FEMAT report and the SEIS identified species that are at risk of extirpation from Federal lands within the range of the northern spotted owl under Alternative 9.

Background: In imposing the injunction on the Forest Service in July 1992, Judge Dwyer said they cannot adopt a plan which they know or believe will probably cause the extirpation of other native vertebrate species in the planning area. This has its roots in the purpose of the Endangered Species Act and the Federal agencies' responsibility to not take actions that could result in the listing of species as threatened or endangered, so it is clear that such a standard could be imposed on all species examined by FEMAT, not just the vertebrates.

Based on the results of their assessment panels, FEMAT determined that 109 species had a 20% likelihood of Outcome D (habitat conditions which would result in species extirpation from Federal land). Of these species, three (two vascular plants and one mollusk) had a 50% or greater likelihood of Outcome D. There is no mitigation or monitoring that specifically addresses concerns for these species currently identified in the SEIS.

Implications of decision: If we do not address the concerns of at least the three species, we would be saying that there is a better than even chance of extirpating the species on Federal lands within the range of the northern spotted owl if Alternative 9 is implemented. This could be a basis for listing the species as threatened or endangered.

If we acknowledge the concern for the three species and add mitigation measures for them, this presumes that we have sufficient justification for selecting the 50% likelihood level, and that the mitigation measures are sufficient. Dwyer may disagree. The standard for "knowingly will probably cause the extirpation of a species" is not known, and could be set at the 20% level or any other level determined by the courts.

The SEIS team feels this is potentially a fatal flaw of Alternative 9.

Proposed resolution by SEIS Team: We will include mitigation measures for the three species in the Final SEIS, and will add rationale for the basis for the assessment and why the determinations may be flawed in the ROD.

Policy Issue #7

Date: October 23, 1993

Statement of issue: The Biological Opinion on Alternative 9 that will appear in the Final SEIS, may require changes to Alternative 9.

Background: In previous management plans for northern spotted owls, owls in portions of the matrix were protected by reserved and managed pair areas to provide population support and improve dispersal conditions. In developing Alternative 9, FEMAT did not include these pair areas. A review by the Scientific Advisory Group (SAG) confirmed that this was an intentional omission, that they were not assumed by the northern spotted owl assessment panel, and some SAG members and other owl biologists still had concerns.

In the Eastern Cascades province of Washington, Alternative 9 places more lands in reserves, but not where the owls are located. By keeping the managed and reserved pair areas from earlier plans, this could be mitigated. In the Cascades province of California, a similar situation exists, plus there is a concern about the need to keep managed pair areas to maintain important connections to habitat of a subspecies of spotted owl.

Another concern that has been raised about Alternative 9 is whether the matrix prescriptions of Alternative 9 would meet the needs of spotted owl dispersal. Recovery is contingent upon providing habitat for large clusters of owls, and providing dispersal habitat to allow movement between clusters. Alternative 9 does not specifically provide dispersal habitat, assuming that the provision of riparian reserves would serve this function. Concerns now being raised focus on the near term condition of those riparian reserves that are so fragmented that they may not be adequate dispersal habitat.

The concepts of managed pair areas, reserved pair areas and dispersal habitat, like the 50-11-40 rule, were grounded in the report of the Interagency Scientific Committee and carried forward in the Final Draft Recovery Plan. FEMAT attempted to provide a new basis for owl management in Alternative 9 that replaces these concepts with a reserve system. Most of the concern is with the near term, since there is general agreement that eventually the reserve system should work, depending on the rate of timber harvest over the next decades.

The Biological Opinion is expected in Draft by November 1, 1993, with the Final in time to print in the Final SEIS (November 10). While not all owl biologists agree with Alternative 9 or with the concerns expressed above, some consensus would be preferred prior to finalizing the Biological Opinion and the Final SEIS.

Implications of decision: If the Fish and Wildlife Service issues the Biological Opinion requiring the addition of these designated areas, it will require changes to Alternative 9. If this occurs and Alternative 9 is not changed, we may risk a "jeopardy" opinion.

Proposed resolution by SEIS Team: No change to Alternative 9.

Policy Issue #8

Date: October 24, 1993

Statement of issue: Actions on non-Federal lands affect the assumptions for the viability assessments and the analysis of cumulative impacts in the Final SEIS.

Background: The FEMAT Report describes the assumptions given to the viability panels in part as follows:

For this assessment, they were asked to assume that [landownership patterns and habitat conditions on nonfederal lands, habitat conditions outside the range of the northern spotted owl, and other environmental conditions caused by activities off federal lands] would be adequate to support a stable, well-distributed population of the species, if habitat on federal land was adequate to support such a population.

This may be inconsistent with the results of the upcoming 4(d) rule decision and with the results of the eastside analysis.

The adequacy of the SEIS analysis of the cumulative impacts of actions on both Federal and non-Federal forest lands has been questioned as a potential NEPA-compliance issue. The premise for the cumulative impact analysis in the Draft SEIS is that logging on non-Federal lands is essentially constant and the net change will be on Federal lands which is covered in the SEIS itself. This assumption could be changed dramatically if the 4(d) rule resulted in significant change in the amount and distribution of spotted owl habitat on non-Federal lands. This habitat is also used by other old-growth and late-successional forest associated species. The effect on the viability of a variety of species may require a new analysis and viability assessment, with a potential for additional restrictions on Federal management actions.

Implications of decision: By ignoring the 4(d) rule effort, we risk potential changes to the cumulative impact analysis and the changed assumptions for the viability determinations, and a legal challenge to Alternative 9 once the 4(d) rule decision is made. It is possible, however, that the 4(d) rule won't change the analysis or the assumptions.

By waiting to include the 4(d) rule results (or at least including their preliminary results as a reasonably foreseeable future action), we could significantly change the assumptions upon which the SEIS and the viability panels were based, requiring changes to Alternative 9.

Proposed resolution by SEIS Team: We will strengthen the cumulative impact analysis in the Final SEIS, but will continue our basic premise. We will not make changes to the viability assumptions.