

ENVIRONMENTAL ASSESSMENT

for the

North Murphy Forest Management Project

(OR110-97-20)

**U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT
GRANTS PASS RESOURCE AREA**

July 1997

**GRANTS PASS RESOURCE AREA
ENVIRONMENTAL ASSESSMENT**

TABLE OF CONTENTS

	<u>Page</u>
Chapter 1: Purpose of and Need for Action	1
A. Introduction.....	1
B. Purpose and Need for the Proposal.....	1
C. Project Location.....	2
Chapter 2: Proposed Action/Alternatives	4
A. Issues Relevant to the Project Proposal	4
B. Proposed Action and Alternatives	4
1. Introduction.....	4
2. Objectives of the Proposed Action	4
3. Proposed Action.....	5
4. Project Design Features	17
Chapter 3: Environmental Consequences	22
A. Introduction.....	22
B. Site Specific Beneficial or Adverse Effects of the Alternatives.....	22
1. Recreation	22
2. Botanical Resources - Special Status Plants.....	22
3. Forest Vegetation.....	24
4. Wildlife/Wildlife Habitat	26
5. Special Forest Products.....	31
6. Fire and Fuels.....	31
Chapter 4: Agencies and Persons Consulted	39
A. Public Involvement	39
B. Availability of Document and Comment Procedures	39

APPENDICES

Appendix A Issues outside the scope of North Murphy Forest Management Project	40
Appendix B Alternatives Considered but Eliminated During the Interdisciplinary (ID) Team Process	41
Appendix C Potential Monitoring.....	42

LIST OF TABLES

Table 1: Summary Description of Proposed Action	10
Table 2: Road Use, Construction, Improvement, Renovation, and Closures	16
Table E-1: Effects of Proposed Action to Wildlife Habitat/Species	28
Table E-2: Hazard Rating by Acres and Percent for BLM Lands Considered in North Murphy Project Area EA	32
Table E-3: Hazard Rating by Acres and Percent for Private Lands Considered in North Murphy Project Area EA	34

LIST OF MAPS

Map 1: Project Location Map	3
Map 2: Proposed Action	9

Chapter 1

Purpose of and Need for Action

A. Introduction

The purpose of this environmental assessment (EA) is to assist in the decision making process by assessing the environmental and human affects resulting from implementing the proposed project and/or alternatives. The EA will also assist in determining if an environmental impact statement (EIS) needs to be prepared or if a finding of no significant impact is appropriate.

This EA tiers to the following documents:

1. The Final EIS and Record of Decision dated June 1995 for the Medford District Resource Management Plan dated October 1994 (RMP-ROD);
2. The Final Supplemental EIS on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl dated February 1994; and
3. The Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and its Attachment A entitled the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, dated April 13, 1994 (NFP-ROD).

B. Purpose and Need for the Proposal

The purpose of the proposed action is to implement the Medford District's Resource Management Plan (RMP). The proposed action is designed to meet a variety of resource and human (social/economic) needs and objectives outlined in the RMP. These include:

- contribution to the Medford District's timber harvest/forest products commitment, thus helping meet the demand for wood products both regionally and nationally and supporting local and regional economies;
- management of the forest land in a manner that will provide for and promote a wide a variety of noncommodity outputs and conditions including wildlife habitats, sustainable forest conditions, and recreation opportunities.
- management of riparian structure and function to maintain water quality and fisheries values in the project area.

The purpose or need of the proposed action is also to address where possible or appropriate the scoping issues noted in Chapter 2 of this EA.

C. Project Location

The general location of the proposed project is shown on Map 1.

Map 1

**Project Location Map
North Murphy Forest Management Project**

T.37S., R.4W. & R.5W.

Chapter 2

Proposed Action/Alternatives

This chapter describes the issues and objectives that support the proposed action/alternatives. It also describes the proposed action/alternatives that will be addressed or analyzed in this environmental assessment.

A. Issues Relevant to the Project Proposal

A variety of issues and concerns were raised during the initial scoping of this project. These were raised by interested individuals or groups as well as by the planning team and ID team. The issues raised are listed below. Issues are not listed in any order of importance. Many of these issues were used in the design of the proposed project and alternatives. In some cases an issue was considered at the onset and then eliminated from further consideration because it was not within the scope of the project or proposed action. Those issues eliminated are summarized in Appendix A. Issues guiding the design of the proposed action are:

1. The project area is within a highly-populated area of the Applegate Adaptive Management Area (AMA). There is high community interest in the project.
2. The area has a high local demand for firewood, especially hardwoods.
3. Fire hazard is high in the project area.
4. Loss of meadows and pine forest habitats due to past fire suppression and resultant conifer and shrub encroachment.
5. Vehicular access into the project area for fire management is currently limited.
6. Visual effects of the project located near a rural interface area.

B. Proposed Action and Alternatives

1. Introduction

This section outlines the objectives that the proposed action/alternatives are designed to achieve and then describes the proposed action.

2. Objectives of the Proposed Action
 - a. Land Allocation Objectives

The project area is within the Applegate Adaptive Management Area Land Allocation and the Southern Forest General Management Area. Specific objectives for this land allocation are enumerated in the RMP-ROD (pp. 36-37).

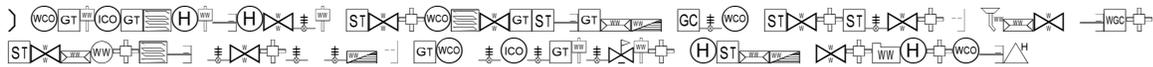
- b. Project Area Objectives

Based on the project planning team’s evaluation of the issues listed in Section A above, the following objectives were used in designing the project proposals:

- (1) Fuels hazard reduction, especially near private property.
- (2) Maintain/improve deer winter range.
- (3) Maintain connectivity in riparian areas for species dispersal.
- (4) Provide timber for the local forest industry, now and in the future..
- (5) Maintain and restore pine sites.
- (6) Maintain and restore meadow sites.
- (7) Meet or exceed Visual Resource Management Class III objectives.

c. Silvicultural Harvest and Understory Thinning Objectives

- (1) Reduce the basal area to increase tree growth, quality and vigor of the remaining trees.
- (2) Create openings large enough for Douglas-fir and pine to become established.
- (3) Create diversified stand structure (height, age, and diameter classes) and old-growth stand characteristics.



3. Proposed Action

The proposed action is summarized in Tables 1 and 2. The project design features noted in the next section are an integral part of the proposed action. Map 2 shows site features and some aspects of the proposed action.

a. Timber Harvest

Table 1 addresses the proposed timber harvest.

b. Silviculture/Understory treatment

Table 1 summarizes the proposed silvicultural treatments. A silvicultural prescription was prepared and is available upon request.

c. Fuels Treatment

Table 1 summarizes the fuel treatment proposals.

(1) Understory Thinning (UT):

The fuels management objective is to reduce the amount of understory live fuel that contributes to ladder fuel conditions that pose the threat of creating crown fire conditions in the event of a wildfire.

(2) Fuel Modification Zones (FMZ):

(a) Fuel Modification Zones will encompass approximately 554 acres in the project area. The FMZ's are created to reduce adverse wildfire effects, limit rate of spread, and/or to establish defensible areas for use during fire suppression activities. Flammable material (vegetation and dead/down fuel) is treated and removed from the surface, understory, and canopy. Treatments include cutting of trees, slashing of shrubs and small vegetation, pruning of residual trees, and snag felling. FMZ's are typically created along ridgelines, between separate stand and vegetation types, or adjacent to private property.

Spacing width between leave trees and shrubs will vary from 20 to 45 feet based on current condition of the vegetation. FMZ widths will be 200 to 300 feet wide.

(b) Additionally, groups and clumps of vegetation may be reserved from treatment to maintain areas of dense cover to meet wildlife habitat objectives. These reserve areas may range in size from 1/10 acre to 1/2 acre. At a minimum, one reserve area per four acres of FMZ would be maintained.

(c) In order to meet wildlife objectives, it has been determined that up to 1-2 snags per acre should be retained or created within the FMZ area and located in the center of the FMZ rather than the edges. Preference is for newer "hard" snags rather than older "soft" snags.

(3) Wildlife Habitat Restoration Prescribed Burning Treatments:

These treatments include the use of prescribed burning (broadcast and hand-pile burning) to setback and/or rejuvenate decadent shrubfields, and to reestablish grass meadows from conifer and shrub encroachment and/or rejuvenate grass growth. Another type of treatment would be oak/grassland maintenance.

Treatments may include some slashing of shrubs and trees to create a fuelbed that optimizes available fuel allowing for burn operations to be conducted in the wetter season of the year. This slashing would cut portions of the shrubfield to create a uniform pattern of dead and down fuel. Slashing in meadow areas would target the encroaching trees and shrubs around the meadow edge and interior to insure the removal of seed sources and maintain the meadow in a grass and forb vegetation condition. Slashing in oak/grasslands would target shrubs and conifers that are

encroaching. Thinning of oaks would promote growth and development of large, full-crowned oak trees.

(4) Rural Interface Area Hazard Reduction Treatments

These treatments, encompassing approximately 212 acres, would be conducted in high hazard areas that have residential structures in close proximity to BLM property lines. The objective would be to remove the fuel hazard on the BLM lands to reduce the effect of wildfire and risk of loss for both BLM resources and private property. Treatments would be very similar to Understory Thinning and/or Fuel Modification Zones. Hand piling and burning would be the prescribed fire treatment. Other fuel removal treatments that do not involve prescribed burning may be possible given access and a utilization demand. These can be explored on an area-by-area basis.

(5) Timber Harvest Units

Timber harvest areas will have slash and fuel hazard reduction treatments where needed. This prevents fuel build-up that creates risk of stand replacement wildfires or endangers other resource values, including private property. These treatments may include understory thinning, underburning or hand pile and burn. "No treatment" areas will be those that do not meet the need-to-treat requirements.

d. Road Treatment

Table 2 lists the roads that would be used, constructed, improved, renovated, and/or closed as a part of this proposed project. Construction, improvement, and renovation work would be primarily a part of the timber harvest actions.

e. Riparian Reserve Treatment

(1) There are areas in the riparian reserves where the existing stand conditions are such that active management and treatment of the stands are recommended in order to maintain and/or enhance the existing quality of the riparian reserve areas relative to their late successional forest connectivity role and relative to long-term water quality and aquatic habitat maintenance. Also, there is presently little coarse woody debris in or adjacent to streams in the project area.

(2) Riparian Reserve treatment objectives:

(a) Create, maintain, and/or enhance late successional habitat where possible based on vegetation type and soil/slope stability conditions.

1) Encourage and expedite the growth and development of larger trees.

2) Encourage the development of an understory of trees where they are currently absent.

- (b) Retain the ROD specified reserve widths, differentiating the treatments within them from those in the adjacent AMA lands.
- (3) Proposed Treatments / prescription for Riparian Reserves
 - (a) Treatment zones / No treatment zones:
 - 1) No harvesting or treatment within riparian reserves along Class 1, 2, or 3 streams;
 - 2) No harvesting or treatment within riparian reserve old-growth seral stage stands along Class 4 streams;
 - 3) No treatment within:
 - 20 feet of the stream bank (either side), OR
 - where side slopes are >60%, 50' of the stream bank, or to a significant topographic break, whichever is less but no closer than 20 feet, OR
 - 150 feet of unstable areas or headwalls.
 - 4) Where the existing canopy closure (all canopy layers) is less than 60% at the localized site, no overstory treatment (understory treatment may occur).
 - (b) Coarse woody material (CWD):
 - retain all existing down CWD
 - retain all existing snags as a future CWD recruitment pool
 - retain green cull trees and trees infected with *Fomes pini* as pool for future CWD
 - (c) Treatment prescription

See silvicultural prescription. In general, the prescription is a thinning from below to no less than a specified basal area.

Map 2
Proposed Action

(SEE LARGE INSERTED MAP)

NORTH MURPHY FOREST MANAGEMENT PROJECT

Table 1: Summary Description of Proposed Action

T-R-SEC OIF	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Condition Class	Silv. / Harvest Prescription	Successional Stage	Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
											Harv./ Treat. Acres	Vol / Ac	Total		
TIMBER HARVEST AND TREATMENT UNITS															
T37S, R5W															
Sec. 9	3	AMA	RTW	22	Shrub (50%) Hardwood (30%) Large Poles (20%)	--	White Oak	--	SLH; BCB	2	0	0	0	--	
Sec. 13	3	AMA	*RTR	200	Large Poles (30%) Hardwood (30%) Mature (15%) Shrub (15%) Seedling (10%)	CT/GS	Mature	HE	UT (40-60%); Mosaic UB; HP/B; BCB Meadow	8	125	1	125	Nat.	*Will change RTW to RTR. Harvest 10 acres in Riparian Reserve.
			RTW	31											
	8	AMA	RTR	133	Mature (40%) Large Poles (30%) Hardwood (30%)	CT/GS	Mature	HE	UT (20-40%); HP/B	15	100	4	400	Nat.	Harvest 4 acres in Riparian Reserve.
	9	AMA	RTR	53	Large Poles (40%) Mature (20%) Hardwood (25%) Shrub (15%)	CT/GS	Mature	HE	UT (20-40%); HP/B	20	40	4	160	Nat.	Harvest 6 acres in Riparian Reserve.
Sec 14	3	AMA Riparian	RTR/ RMR	72	Large Poles (90%) Mature (5%) Hardwood (5%)	CT/GS	Mature	HE	UT(30%-40%); UB; HP/B	15	60	4	240	Nat.	Understory treatment only in riparian reserve
Sec. 15	2	AMA	RTW	181	Hardwood (50%) Shrub (20%) Large Poles (20%) Poles (10%)	---	Mid	--	SLH; HP/B	2	0	0	0		Buffered Riparian Reserve
	3	AMA	RMR	41	Large Poles	CT/GS	Mature	HE	UT(10-20%);HP/B	25	20	5	100	Nat.	
Sec. 15	4	AMA	RMR	34	Large Poles(80%) Hardwood (20%)	CT/GS	Mid	HE	UT(20%-30%); HP/B	8	20	2	40	Nat.	

NORTH MURPHY FOREST MANAGEMENT PROJECT

Table 1: Summary Description of Proposed Action

T-R-SEC OIF	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Condition Class	Silv. / Harvest Prescription	Successional Stage	Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
											Harv./ Treat. Acres	Vol / Ac	Total		
Sec. 23	1	AMA Riparian	RTR	132	Mature (40%) Large Poles (40%) Hardwood (15%) Sapling (5%)	CT/GS	Mature	HE	UT (30%); HP/B	8	20	3	60	Nat.	Understory treatment and harvesting (4 acres) in riparian reserve
	8	AMA	RTR	16	Large Poles (80%) Shrub (20%)	CT/GS	Mid	HE	UT (40-60%); UB	6	13	1	13	Nat.	Understory treatment and harvesting (4 acres) in riparian reserve.
	9	AMA	RTR	75	Mature (25%) Large Poles (25%) Hardwood (25%) Seedlings (25%)	--	Mature	--	UT (30-60%); HP/B	8	0	0	0	--	Understory treatment and harvest (4 acres) in riparian reserve.
	13	AMA	RMR	14	Large Poles (90%) Hardwood (10%)	--	Mid	--	UT (40-60%)	4	?	?	?	?	Understory treatment and harvest (4 acres) in riparian reserve.
Sec. 24	1	AMA	RTR RMR	277	Hardwood (30%) Large Poles (25%) Seedling/Sap (15%) Mature (10%) Shrub (10%) Poles (10%)	CT/GS	Mature	HE	UT (30-50%); HP/B	9	125	1	125	Nat.	Buffered reserves.
Sec. 26/23	001/010	AMA	RTW	60/18 (78)	Shrub (40%) Hardwood (25%) Large Poles (30%) Mature (5%)	---	Mid	---	SLH; Mosaic UB; Spot HP/B-RIA	4	0	0	0	---	Understory treatment in riparian reserves.
Sec. 26	2	AMA	RMR	70	Mature (30%) Large Poles (35%) Hardwood (35%)	CT/GS	Mature	HE	UT (20-40%); HP/B	15	23	3	69	Nat.	Harvest 6 acres in riparian reserve.
	3	AMA	RTW	310	Hardwood (50%) Pole (30%)	---	Mid	---	HP/B	5	0	0	0	---	Fuel modification

NORTH MURPHY FOREST MANAGEMENT PROJECT

Table 1: Summary Description of Proposed Action

T-R-SEC OIF	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Condition Class	Silv. / Harvest Prescription	Successional Stage	Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
											Harv./ Treat. Acres	Vol / Ac	Total		
					Large Pole (10%) Grass (10%)										
T37S, R4W															
Sec. 17	16	AMA	FGR RTR	41	Large Poles (70%) Hardwood (15%) Mature (15%)	CT/GS	Mature	HE	UT (5%); UB	16	15	2	30	Nat.	Harvest 10 acres in riparian reserve.
	17	AMA	RTR	117	Large Poles (90%) Mature (10%)	CT/GS	Mature	HE	UT (5%)HP/B	25	80	7	560	Nat.	Harvest 4 acres in riparian reserve.
	18	AMA	NCW	37	Hardwood (100%)	--	White Oak	--	Oak thinning; UB	0	0	0	0	--	Non-riparian.
	23	AMA	RTR	14	Large Poles (40%) Hardwood (40%) Poles (20%)	CT/GS	Mature	HE	UT (40-60%); HP/B	8	6	2	12	Nat.	Non-riparian.
Sec. 18	7	AMA	RTR	104	Large Poles (35%) Hardwood (20%) Mature (10%) Poles (10%) Seedling (10%) Shrub (10%) Grass (5%)	CT/GS	Mid	HE	UT (60-80%); Spot UB; HP/B	12	5	5	25	Nat.	Buffered reserves
	9	AMA	NB	44	Hardwood (90%) Shrub (10%)	--	White Oak	--	SLH; BCB	0	0	0	0	--	Non-riparian
	13	AMA	RTR FTR/ RMR	52	Large Poles (50%) Hardwood (25%) Shrub (15%) Seedling (5%) Mature (5%)	CT/GS	Mature	HE	UT (60-80%); HP/B	10	4	2	8	Nat.	Buffered reserves.
	15	AMA	RTR	32	Large Poles (60%) Mature (20%)	--	Mature	--	UT (50-70%)	16	0	0	0	--	Harvest 4 acres in riparian

NORTH MURPHY FOREST MANAGEMENT PROJECT

Table 1: Summary Description of Proposed Action

T-R-SEC OIF	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Condition Class	Silv. / Harvest Prescription	Successional Stage	Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
											Harv./ Treat. Acres	Vol / Ac	Total		
					Shrub (20%)										reserves.
	16	AMA	FGR RTR	77	Large Poles (60%) Hardwood (15%) Poles (10%) Seedlings (10%) Shrubs (5%)	CT/GS	Mid	HE	UT (20-40%); Spot UB	5	20	2	40	Nat.	Harvest 8 acres in riparian reserves.
Sec. 18	19	AMA	LSW	19	Hardwoods (50%) Poles (50%)	--	White Oak	--	SLH; Spot UB	--	0	0	0	--	No harvest.
	20	AMA	RTR	27	Large Poles (25%) Mature (25%) Shrubs (25%) Hardwood (25%)	CT/GS	Mid	HE	UT (50-70%)	5	27	2	54	Nat.	Buffered reserves.
	22	AMA	RTR	28	Large Poles (70%) Poles (20%) Hardwood (10%)	CT/GS	Mature	HE	UT (20-40%)	7	24	2	48	Nat.	Harvest 4 acres in riparian reserves.
	28	AMA	RTR	40	Large Poles (50%) Shrubs (20%) Mature (10%) Seedlings (10%) Poles (10%)	--	Mid	--	UT (30-50%)	15	0	0	0	--	Non-riparian.
Sec. 19	1	AMA	LSW	226	Hardwood (50%) Poles (30%) Seedling (15%) Shrub (5%)	--	White Oak	--	Spot BCB, UB	0	0	0	0	--	No harvest.
	5	AMA	FMR RTW	14	Large Poles (70%) Poles (20%) Hardwood (5%) Seedlings (5%)	--	Old Growth	--	SLH; HP/B-RIA	0	0	0	0	--	
					Hardwood (60%)				SLH;						

NORTH MURPHY FOREST MANAGEMENT PROJECT

Table 1: Summary Description of Proposed Action

T-R-SEC OIF	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Condition Class	Silv. / Harvest Prescription	Successional Stage	Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
											Harv./ Treat. Acres	Vol / Ac	Total		
	6	AMA	NCW	44	Poles (20%) Shrubs (20%)	--	White Oak	--	Mosaic UB/BCB	0	0	0	0	--	No harvest.
Sec. 19	12	AMA	FMR RTR	16	Large Poles (50%) Poles (20%) Hardwoods (30%)	CT/GS	Mid	HE	UT (20-40%); HP/B	7	10	2	20	Nat.	Harvest 4 acres in riparian reserves.
	13	AMA	RTR	29	Large Poles (50%) Hardwood (25%) Seedling (15%) Shrub (5%) Mature (5%)	CT/GS	Mature	HE	UT (20-40%); HP/B	12	15	2	30	Nat.	Buffered reserves.
Sec. 20	4	AMA	RMR	12	Large Poles (80%) Hardwood (10%) Poles (10%)	CT/GS	Mature	HE	UT (40-60%); HP/B	20	12	4	48	Nat.	Buffered reserves.
	5	AMA	RTR	15	Poles (40%) Large Poles (30%) Hardwood (30%)	--	Mature	--	UT (60-80%); HP/B	5	0	0	0	--	
	6	AMA	FMR RTR	32	Poles (40%) Hardwood (30%) Large Poles (15%) Shrub (10%) Seedling (5%)	--	Mid	--	UT (60-80%); Spot UB; HP/B	1	0	0	0	--	
Sec. 21	7	AMA	FMR RTR	55	Hardwoods (40%) Seedlings (30%) Large Poles (20%) Poles (10%)	--	Mid	--	UT (100%); Spot UB; HP/B	5	0	0	0	--	
Sec. 29	1	AMA	RMR	61	Large Poles (50%) Hardwood (30%) Seedling (15%) Mature (5%)	CT/GS	Mid	HE	UT (60-80%);HP/B	4	10	1	10	Nat.	Non-riparian. Rare plants buffered.

NORTH MURPHY FOREST MANAGEMENT PROJECT

Table 1: Summary Description of Proposed Action

T-R-SEC OIF	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Condition Class	Silv. / Harvest Prescription	Successional Stage	Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
											Harv./ Treat. Acres	Vol / Ac	Total		
	2	AMA	RMR	32	Large Poles (60%) Poles (20%) Hardwood (10%) Seedlings (10%)	CT/GS	Mid	HE	UT (60-80%); HP/B	12	20	4	80	Nat.	Non-riparian.
	3	AMA	RMR	70	Large Poles (80%) Mature (5%) Hardwood (5%) Poles (5%) Seedling (5%)	CT/GS	Mature	HE	UT (10-20%); HP/B	40	40	10	400	Nat.	Non-riparian.
Sec. 31	1	AMA	FMR RMR	38	Large Poles (30%) Hardwood (30%) Seedlings (20%) Poles (20%)	--	Mid	--	UT (60-80%); HP/B	8	0	0	0	--	

Footnotes:

- 1) TPCC (Timber Productivity Capability Classification): RTR-regeneration restricted due to hot temperatures and low soil moisture; RMR-regeneration restricted due to low soil moisture; RTW-sites will not meet or exceed minimum stocking levels within 1-5 years of harvest; NG-Non commercial forest land due to slope gradient; FGR-Fragile due to slope gradient; NCW-Non commercial forest land (species); NB-Non commercial but capable of producing 10% commercial forest; FTR-Fragile due to temperature and low soil moisture; LSW-Low site-sites that produce less than 20 cubic feet per year of commercial forest species.
- 2) Condition Class: Characterized by existing dominant vegetation type and size class; Mature: 21" dbh+; Large Pole: 11"-21" dbh; Poles: 5"-11" dbh; Seedling/sapling: 0-4.9" dbh; Hardwoods: commercial land dominated with hardwoods; Shrubs: usually natural shrub fields; Grass: Grass, forbs and herbaceous vegetation.
- 3) Harvest acres vs. Unit acres: The difference in these acreages is attributable to large variability within the unit, unit inclusions of riparian reserves, non-forest, etc.
- 4) All acres are included in treatment column for purposes of impact analysis. In actuality, percentages of these units will be treated.
- 5) Successional Stage: The series of relatively transitory plant communities that develop during ecological succession from bare ground to the climax stage. **Mature:** Stand of trees for which the annual net rate of growth has peaked. Stands are generally greater than 80-100 years old and less than 180-200 years old. Stand age, diameter of dominant trees and stand structure at maturity vary by forest cover types and local site conditions. Mature stands generally contain trees with a small average diameter, less age class variation and less structural complexity than old growth stands of the same forest type. **Mid:** Trees have achieved at least a small pole side (>4" dbh). Stands can be dominated by either hardwoods or conifers or can be a hardwood/conifer mix. Stands are generally dense and single-layered but could be beginning to self thin and differentiate. Upper end tree diameters could range to 16-18" dbh. Stand age would generally be less than 80 years. Larger, scattered overstory trees may be present but will generally number less than eight trees per acre.
- 6) Abbreviations: SLH - Slash sprung and damaged *conifers and* hardwoods 1"-6" DBH. UB - Understory Burn. BCB - Broadcast Burn. HP/B - Hand pile slash 1"-6" x 2', cover, and burn piles. UT - Understory thin conifers to approximately a sixteen (16) foot by sixteen (16) foot spacing, plus or minus twenty (20) percent. Thinned clumps of hardwoods (largest three stems) will be spaced approximately twenty (20) feet apart. CT - Commercial thin. GS - Group Selection. T - Tractor. C- Cable. HE - Helicopter. RIA-Rural Interface Area

**Table 2:
Road Use, Construction, Improvement, Renovation, and Closures**

Road #	Seg	Mile	Existing Surface Type	Proposed Maintenance, Construction, Renovation, Improvement, Closures	Road Control
37-4-4.1)				
	CB				
	D	1.13	Aggregate Surface Coarse		
	D				
)				
	CB				
)				
	CB				
	CBH				
	=				
	D				
	PS				
)				
	CB				

2) All systems: All harvested trees would be limbed in the units prior to yarding. This is to reduce the extent of damage to the residual stand and to reduce soil disturbance.

b. Seasonal Operation Restrictions

The following seasonal operating restrictions would apply:

Location	Restricted Activities	Restricted Dates (specified activities not permitted during:)	Reasons / Comments
Entire project area	All logging and log hauling operations	October 15 to May 15 of following year	Erosion Control. Some variations of the dates depending on weather and soil moisture conditions.
37-5-24 and 37-4-19, 29: 1/4 mile radius around a known spotted owl nest site. Any other discovered spotted owl nest sites	All timber harvest activities (felling and yarding), chainsaw operation and prescribed burning	March 1 to June 15	Dates and restriction dependent on nesting status. (Rogue River/South Coast Biological Assessment, Aug. 1996)
37-4-19: 1/4 mile radius around a known red tailed hawk nest site.	All timber harvest activities (felling and yarding), chainsaw operation and prescribed fire.	March 1 to July 15	Red Tailed hawk nest site. Dates and restriction dependent on nesting status (BLM Instruction Memo OR-96-78, Revision of Timber Sale E-4 Special Provision, Attachment 2).
Within 1/4 to 1/2 mile radius around any raptor nest	All timber harvest activities (felling and yarding) and chainsaw operation.	Variable depending on the species	(BLM Instruction Memo OR-96-78, Revision of Timber Sale E-4 Special Provision, Attachment 2).
All harvest units and road construction ROWs.	Various activities depending on the species	Variable depending on the species	Restrictions only if special status species are located. (BLM Instruction Memo OR-96-78, Revision of Timber Sale E-4 Special Provision, Attachment 2).

c. Slash Treatment and Burning

Prescribed burning would be managed in a manner consistent with the requirements of the Department of Forestry's Smoke Management Plan and the Department of Environmental Quality's Air Quality and Visibility Protection Program. Smoke would be managed to preclude intrusion into air quality maintenance areas when air stagnation conditions exist. These conditions are usually described as "yellow" or "red" wood stove advisory days. Additional measures to reduce the potential level of smoke emissions would include: mop-up to be completed as soon as practical after the fire, burning with lower fuel moisture in the smaller fuels to facilitate their quick and complete combustion, burning with higher fuel moisture in the larger fuels to minimize consumption and burn out time of those fuels, and covering handpiles to permit burning during the rainy season where there is a stronger possibility of atmospheric mixing and/or scrubbing.

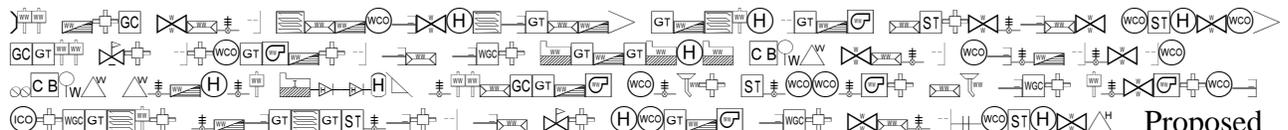
Prescribed underburning would be designed to be a low intensity burn over the majority of the burn area. It would create a mosaic burn effect which would result in up to 20-30 percent of the total burn treatment area with minimal to no fuel consumption. This is to reduce the loss of large woody debris, organic matter, and any conifer regeneration present. Burning would occur at any time of the year in which fuel moisture and weather conditions enable this type of burning.

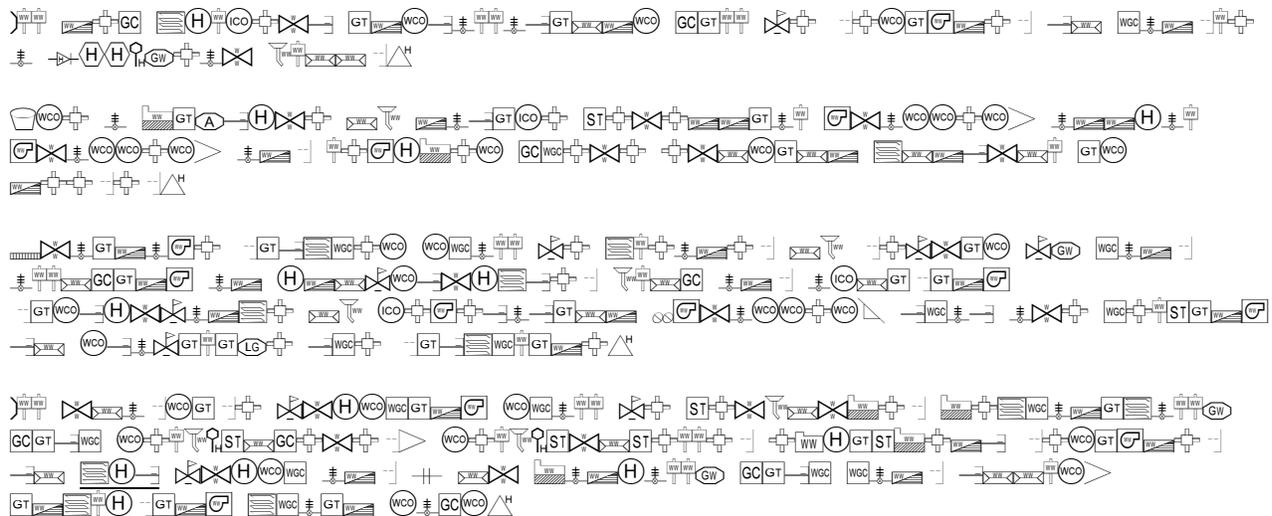
Characteristically, this would be in the spring.

All areas planned for prescribed fire treatment that contain sensitive plant species would be burned in the fall season to minimize impacts on plant during active growth. Burning in these areas would be done under conditions that would result in a cool burn to minimize potential damage. No burning would be done within the *Cypripedium* buffers.

All harvest units would be reevaluated following logging to insure that the slash/fuel treatments are appropriate for the post-harvest condition. The fuel treatments noted in Table 1 reflect the current best estimate of slash treatment needs. Treatments may be changed if it appears that something different would better accomplish fuel treatment and/or site preparation needs while reducing the potential adverse impacts on air quality and site productivity.

d. Roads - Construction, Improvement, Decommissioning, Closures


Proposed road closures and decommissioning are intended to reduce the potential for erosion and to reduce the impacts on wildlife. Roads proposed for decommissioning that are needed to support the prescribed burning/fuel reductions would have the decommissioning scheduled after burning is complete.



In order to minimize sedimentation on natural surface haul roads, rock should be stockpiled and used for spot rocking for protection. Also, these roads shall be watered to minimize dry grinding.

To minimize erosion caused by Off Highway Vehicle (OHV) use on decommissioned roads, the entry areas shall be camouflaged, deep ripped, covered with brush or slash, in addition to blocking. Any combination of the above methods or other methods can be used as deemed necessary on an individual site basis by BLM to discourage OHV access.

maintain this amount of CWD over the long term. Other upland areas appear to have, or would have after logging, sufficient coarse wood to also meet ROD requirements.

In those portions of the riparian reserves where there are currently fewer than two snags / acre, retain three live large trees per acre that are approaching mortality to provide for long term CWD source.

h. Botanical Resource Protection

If any Survey-and-Manage species are found (*e.g.*, *Cypripedium fasciculatum*, *C. montanum*, or *Allotropa virgata*) in any units, a no-harvest, no-ground disturbance protection buffer will be implemented for a minimum of a 100-foot radius around each population. On *Cypripedium* sites no slashing or burning would take place.

If federal or state listed or candidate species or Bureau sensitive species are found, a minimum 100-foot radius no-harvest, no-ground disturbance buffer will be required. For other special status species, a protection buffer size will be determined on a case-by-case basis depending on the species' habitat requirements.

For all protection buffers, trees will be directionally felled away from buffer edges.

Chapter 3 Environmental Consequences

A. Introduction

Only substantive site specific environmental changes that would result from implementing the proposed action or alternatives are discussed in this chapter. If an ecological component is not discussed, it should be assumed that the resource specialists have considered affects to that component and found the proposed action or alternatives would have minimal or no affects. Similarly, unless addressed specifically, the following were found not to be affected by the proposed action or alternatives: air quality; areas of critical environmental concern (ACEC); cultural or historical resources; Native American religious concerns; prime or unique farmlands; floodplains; endangered, threatened or sensitive plant, animal or fish species; water quality (drinking/ground); wetlands/riparian zones; wild and scenic rivers; and wilderness. In addition, hazardous waste or materials are not directly involved in the proposed action or alternatives.

General or "typical" affects from projects similar in nature to the proposed action or alternatives are also described in the EISs and plans to which this EA is tiered.

B. Site Specific Beneficial or Adverse Effects of the Alternatives

1. Recreation

a. Affected Environment

Recreational use of the area is dispersed and includes: off highway vehicle (OHV) riding, equestrian use, hunting, driving for pleasure, hiking, and bicycling. There are no proposed recreation sites in the project area. There are unconfirmed reports of an existing "informal" equestrian trail in the Oscar Creek area which the locals use. Some OHV use has caused some conflict with local private landowners.

b. Environmental Effects

Proposed fuel modification zones which occur on the ridges may provide increased access for use by off highway vehicles (OHVs). Increased OHV activity may increase erosion potential and may cause conflicts between users and adjacent private landowners.

Proposed Mitigation Measure #1: Where the fuel modification zones cross roads, leave a buffer of trees on each side of the road to provide screening and make them less visible to OHV users.

2. Botanical Resources - Special Status Plants

a. Affected Environment

Botanical surveys have been completed for three sections in the project area. The following have been found:

In Unit 003, 37S, 5W, Section 13, one population of *Cypripedium fasciculatum* (Clustered

Ladyslipper)

In Unit 009, 37S, 5W, Section 23, two populations of *Cypripedium fasciculatum*

Adjacent to Unit 001, 37S, 5W, Section 23, one population of *Pellea mucranata ssp. mucranata*.

Cypripedium fasciculatum (CYFA) habitat occurs primarily on moist northerly aspects (anywhere from west to north to east slopes) in older forests with greater than 60 percent canopy closure. This orchid species is very long-lived, can take up to 15 years to emerge above ground, and requires specific mycorrhiza for germination and establishment. *CYFA* occupies a range from central Washington to northern California with some scattered populations in the Rocky Mountains. The species sparsely covers this range, is currently considered threatened or sensitive in most states, and is listed in Utah. It is a Bureau Sensitive species, a Species of Concern under the U.S. Fish and Wildlife Service, and a Northwest Forest Plan Survey & Manage species (Strategy 1 and 2).

Pellea mucranata ssp. mucranata is a fern whose population range is primarily in California. The population found on this sale is the first site known in Oregon. Until other populations are found, it should be considered extremely rare. The species has Bureau Assessment protection status.

b. Environmental Effects

Much of the North Murphy project area occurs on southern aspects with dry site characteristics. The locations of *CYFA* known so far occur on northwestern and northeastern aspects in the Douglas-fir vegetation series. Within the project area potential habitat for this species exists in late successional stage northern aspects where the microsite characteristics are moist with a high percentage of canopy closure. This kind of habitat does not occur often since the topography supports a drier habitat over much of the project area. Hence, the late successional habitat required by these orchids is naturally small and fragmented.

While short term direct effects may be mitigated by the protection buffers established through the PDFs, long term indirect effects could include a reduction in population size and productivity of *CYFA* within the protection buffers established by the PDF's. There is no definitive information available on whether 100 foot radius buffers will protect this species' populations in the long run. Disruption of mycorrhizal connections as a result of the proposed actions could be detrimental to the productivity of the population over the long term.

Indirect impacts will occur from harvesting in areas of late successional forest habitat. The proposed commercial thinning will disturb the ground surface in this habitat which is detrimental to any orchid populations that may be present and /or dormant as well as to the establishment of new populations from intact habitat. The thinning will also open the canopy to a point that could be a detriment to survival of potential populations. Appendix J-2 (NFP's Final EIS) states that canopy closure at the population sites should be maintained at greater than 60 percent

It discusses the importance of maintaining ecosystem structure and function for these species, besides maintaining immediate canopy closure. It further notes that size and quality of habitat are important factors for the survival of *CYFA* and points out that the species can be associated with old growth Douglas-fir in southwest Oregon.

The proposed action will reduce the old growth stand densities in moist sites to 30-foot canopy separation. This will cause a significant change in habitat moisture and will destroy mycorrhizal connections between the old-growth tree and surrounding vegetation. This will essentially eliminate what little moist late successional forest habitat currently exists on the project area.

Proposed Mitigating Measure #2: In late successional forest stands (mature and old growth) shown in Table 1, retain 60 percent canopy closure over as much of the northern, moist aspects as possible. Minimize clearing around old growth trees to avoid disturbing mycorrhizal connections.

c. Cumulative Effects

The North Murphy project area and surrounding private land has been extensively cut for timber production. No official habitat assessment has been done in southwestern Oregon for *Cypripedium fasciculatum*, but of the known population sites on BLM land, at least 80 percent are being affected by timber harvesting projects and the consequent canopy thinning, ground disturbance, and habitat fragmentation. Of the known populations, the majority are being protected through buffers that have not yet been proven to ensure viability for a specific population. The Late Successional Reserve land allocation will not provide enclaves or refugia for *CYFA* over the long term because the majority of populations and potential habitat exists in the mixed evergreen vegetation of the matrix land allocation.

The reasonably foreseeable future actions that will take place in the AMA and on county and private land include continued timber harvest, understory treatments, and clearing of forest land for development. The long term effect is a decrease in the ability of populations to maintain or to expand from these small islands of undisturbed ground into surrounding altered habitat. There will be an increase in the chances of extirpation of the species.

Management recommendations have been based on Appendix J-2, Northwest Forest Plan, ROD Northwest Forest Plan, Medford District Resource Management Plan, BLM Manual 6840, Medford District botanist advisement and professional knowledge.

Additional Reference: Wells, T.C.E. The Biological Aspects of Rare Plant Conservation - Population Ecology of Terrestrial Orchids. Wiley and Sons Ltd. 1981.

3. Forest Vegetation

a. Affected Environment

Low moisture regimes and drought conditions coupled with dense stands have created stress conditions over most of the project area. The largest concentration of insect killed trees in the Grants Pass Resource Area is within the project area. The recent lack of frequent natural disturbance and fire suppression has enabled many conifer stands to reach high stocking levels that cause suppression, mortality, or loss of tree vigor (reduced radial growth and live crown ratios). The ability of trees to respond to release is diminished and susceptibility to insect attack is thus

increased. Old growth Douglas-fir, Sugar pine, and Ponderosa pine trees have been dying because of competition for water with dense understory vegetation. Many of the forest stands have a dense overstory with ladder fuels present in portions of the stand, thereby creating conditions for crown fires to occur that could result in large stand replacement fires. Douglas-fir is regenerating in pine sites or shading out Ponderosa pine on sites where pine is better adapted physiologically. Manzanita and ceanothus have encroached on oak woodlands and grasslands.

In approximately one third of Section 18, and in Section 17 the 1987 Savage Creek fire burned through the ground vegetative layer and mid-canopy layers in all of the proposed harvest units, simplifying the stand structure to single or to an irregular pattern in two canopy layers.

b. Environmental Effects

The proposed harvest and understory reduction treatments in the upland and riparian areas will cause the necessary disturbance to provide growing space for additional canopy layers to form. Crown ratios throughout the stand will be increased over time. Late seral tree species, old-growth Douglas-fir, pine and oak will be favored for retention under the present treatment proposal. Selected hardwoods will be maintained in the stands.

Reducing stand densities from the current ≥ 0.6 relative density to less than 0.4 will reduce competition between existing trees. (A relative density of 0.35 is considered an optimal thinning objective for maximizing residual tree growth.) As a result, growth rates which are currently slowing will increase. Tree vigor and resiliency to insect and disease attack is enhanced as competition is decreased. Dominant and co-dominant trees will not have to wait until the intermediate and suppressed trees die from competition for an increase in available nutrients, light and water. Larger trees will develop quicker. The proposed treatment will produce a variety of stand densities ranging from free to grow conditions to conditions favorable for formation of snags and CWD formation. Existing stands in mature and mid-seral stages will be modified by a reduction in canopy closure to slightly less than forty percent in harvest areas, but will otherwise remain in the same seral stage classification and may reach the next successional stage quicker. Overall canopy closures will return to their current levels (greater than 60 percent) within fifteen years. While the proposed action will modify a variety of components that describe successional stages, the most substantial being canopy closure, there should not be a significant change in forest acreage categorized as late successional forest. There will be an increased productivity of these treated lands for future harvest in both the understory and overstory. The next harvest will likely be a commercial thin within the next thirty years.

The proposed action will harvest approximately 2.7mmbf from 834 acres. Where harvesting will occur, approximately 23 percent of the commercial size trees will be harvested under the proposed action. Harvested conifers will range from 6" dbh to 36" dbh. Distributed throughout the project area will be unharvested stands located in areas that are presently inaccessible, are unavailable for harvest, are not currently economical to harvest, or are specifically left unharvested to grow for future harvest.

4. Wildlife/Wildlife Habitat

a. Affected Environment

The proposed project area covers approximately 8,000 acres and ranges in elevation from 1,200 feet near the Applegate River to 3,800 feet at the top of the Rogue/Applegate divide. The area is predominantly a large south exposure that includes many smaller east, west and some northeast aspects along the smaller drainages. Vegetation and the consequent wildlife habitat varies depending on the aspect, elevation and soils. The low elevation south and southwest aspect are primarily oak woodlands consisting of mostly California white oak (*Quercus garyana*) and brush fields that contain both white leaf manzanita (*Arctostaphylos viscida*) and wedge leaf ceanothus (*Ceanothus cuneatus*). At mid elevation these same aspects become pine oak woodlands with the primary species being Ponderosa pine (*Pinus ponderosa*) and California white oak (*Quercus garyana*). The upper elevations on the south and southwest aspects is vegetated by Ponderosa pine and mixed conifer forest where the soils become shallow vegetation shifts to grass and forbs meadows. The low elevation east and northeast aspects are vegetated with a mixed conifer forest species with a high percentage of hardwoods like Pacific madrone (*Arbutus menziesii*) and California black oak (*Quercus kelloggii*). The upper elevations are forested with mixed conifer forest dominated by Douglas-fir (*Pseudotsuga menziesii*) and Ponderosa pine. Results of topography, soils, and past fire history have combined to create a diverse and highly-fragmented habitat. There is very little old growth and mature mixed conifer habitat in the project area. Areas of old growth larger than 20 acres are limited to Sections 13, 24, 26 and 29 and total approximately 270 acres. Mature habitat blocks larger than 20 acres are limited to Sections 14, 15, 17, 24 and 29 and total approximately 380 acres. There are many more small patches of old growth and mature habitat located within the project area. They are, however, small (<10 acres) and scattered.

Riparian areas have survived the historical fires that have maintained much of the upland in the above seral condition. As a result, the riparian areas, especially perennial streams, are largely late successional (old growth) habitat. Intermittent stream riparian zones have been affected in many areas by past fires and are now young, or in some cases, mature forest with single-storied stands with little understory structure. Approximately 115 acres of Class 3 (perennial) and Class 4 (intermittent) riparian vegetation and reserves are in old-growth habitat.

b. Environmental Effects

Table E-1 summarizes the effects of the proposed action on the wildlife and wildlife habitat in the project area.

1) Spotted Owls: The proposed action will “take” three pairs of northern spotted owls known to occur in the proposed action area. “Take” is defined in the Endangered Species Act as activities that harm or harass a listed species. The proposed action will harm the northern spotted owls in the project area by reducing the amount of suitable habitat to less than 1,340 acres within 1.3 miles of the activity centers. Consultation with the US Fish and Wildlife Service has been completed and they have issued a Biological Opinion (#1-7-96-F-392) which permits this take. This document is available at the Medford District Office.

2) Connectivity: Connectivity across the Murphy Watershed is poor under natural conditions. Old growth and mature forest occurs only on the higher elevations, the north and east slopes, and along riparian areas. The proposed action will alter all of the larger blocks of old-growth and mature forest/forest habitat in the project area by reducing the current 60+% canopy closure to less than 40%. Old growth structure such as canopy layers and large snags

will be reduced by approximately 50%. Canopy closures are expected to return to 60+% in 20 years (based on observation of similar stands on site 5 lands). If stands respond as predicted, they should again provide dispersal habitat for spotted owls within 10 years.

Old growth and mature habitat along the Class 3 streams (about 115 acres of habitat) would be unaffected by the proposed action. All existing old growth and mature forest along the major divide between the Murphy Watershed and the Grants Pass Watershed would no longer function as dispersal habitat for northern spotted owls. This condition is expected to last for at least 10 years. Additionally, it would not function as dispersal/refugia for other old-growth/mature forest associated wildlife species for approximately 20 years. This loss of connectivity and refugia will contribute to the decline of the northern spotted owls located within the forest matrix of the Klamath Province (Wagner, *et.al*; unpublished report). Other species associated with old growth/mature forest that have low dispersal capabilities (*e.g.*, terrestrial invertebrates and salamanders) would be isolated for a period of 20 years. Such isolation would restrict genetic flow to adjoining watersheds thereby contributing to a loss of species diversity and to population declines.

Pine and pine-oak savanna have been identified by the Oregon - Washington Partners in Flight working group as a habitat in decline. This habitat is threatened by invading species such as Douglas-fir which compete for resources with the pin and oak, change the structure of the habitat and increase the potential for catastrophic fire. This habitat supports species of reptiles, mammals and birds including the buffer species White Headed woodpecker and the flamulated owl (NFP). This habitat also provides primary winter forage areas for black tailed deer and introduced wild turkeys. Treatments proposed in this action will maintain and, in some cases, improve this habitat by reducing competition from invading species, introducing fire back into these ecosystems, restoring the proper structure and by protecting them from catastrophic fire. The proposed action should help to reverse the decline of some species of pine and pine-oak dependent species and, in the case of deer and turkeys, could result in an increase in local populations.

c. Cumulative Effects

Completion of the North Murphy project and the proposed Scattered Apples and Wild Wonder projects (the latter two projects are currently scheduled for 1998 although project plans and proposed actions have not yet been developed or prepared) would greatly reduce the connectivity and habitat diversity in the Applegate watershed. Connectivity between the Applegate and the Grants Pass fifth field watersheds will be severely limited for approximately 10 years at which time the canopy closure should again exceed 40% which will provide some species, such as the northern spotted owl, potential connectivity. Species which require greater canopy closure such as salamanders would be restricted for a period of approximately 20 years. Habitat diversity in the Applegate watershed, which is currently being provided for by existing old growth and mature conifer stands will be limited for the next 20 years until the canopy closure and stand structures return to existing levels.

The three projects (North Murphy, Scattered Apples, Wild Wonder) collectively have the potential to eliminate all of the old growth and mature forest habitat in the Murphy fifth field watershed outside the Williams LSR. harvest of the existing old growth and mature habitat would reduce canopy closure and remove structure so the stands would not function as old growth or mature habitat for a period of approximately 20 years. This habitat is located at lower elevations along the

Applegate River and on the south side of the watershed. The removal of this habitat would result in an effective barrier to the dispersal of low mobility species 4-5 miles wide. Such isolation would restrict genetic flow across the Murphy Watershed, thereby contributing to loss of species diversity and to population declines.

Table E-1: Effects of Proposed Action to Wildlife Habitat/Species

Unit No.	Unit Acres	Late-Successional Habitat			Survey and Manage Species				Special status species		Pin Oak Habitat
		Connectivity	Refugia	Patch size	Bats	Salamanders	Great Grey Owls	Red Tree Voles	Big Eared Bats	Spotted Owls	
13-003	231	n/e	n/e	n/e	low	n/e	n/e	n/e	n/e	low	+mod
13-008	133	-high	-high	-high	-high	-mod	n/e	n/e	n/e	-high	n/e
13-009	53	-high	-high	-high	-high	-mod	n/e	n/e	n/e	-high	n/e
14-003	72	-mod	-low	-mod	-mod	-low	n/e	n/e	n/e	-mod	+low
15-002	181	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+mod
15-003	41	-high	-high	-mod	-mod	n/e	n/e	n/e	n/e	-mod	n/e
15-004	34	-mod	-low	-mod	-low	n/e	n/e	n/e	n/e	-mod	+low
23-001	132	-mod	-mod	--low	-low	n/e	n/e	n/e	n/e	-low	n/e
23-008	16	-low	-low	-low	-low	n/e	n/e	n/e	n/e	-low	n/e
23-009	75	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+mod
23-013	14	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e
23-010	78	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+mod
26-002	70	-mod	-mod	-mod	-mod	n/e	n/e	n/e	n/e	-mod	n/e
26-003	310	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+mod
17-016	41	-high	-high	-high	-mod	-mod	n/e	n/e	n/e	-high	n/e
17-017	117	-high	-high	-high	-mod	-mod	n/e	n/e	n/e	-high	n/e
17-018	37	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+high
17-023	14	-mod	-mod	-low	-low	-low	n/e	n/e	n/e	-mod	n/e
18-007	104	-low	n/e	-low	-low	n/e	n/e	n/e	n/e	-low	n/e

Table E-1: Effects of Proposed Action to Wildlife Habitat/Species

Unit No.	Unit Acres	Late-Successional Habitat			Survey and Manage Species				Special status species		Pin Oak Habitat
		Connectivity	Refugia	Patch size	Bats	Salamanders	Great Grey Owls	Red Tree Voles	Big Eared Bats	Spotted Owls	
18-013	52	-low	n/e	-low	-low	-low	n/e	n/e	n/e	-low	n/e
18-015	32	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e
18-015	77	-mod	-mod	-mod	-low	-low	n/e	n/e	n/e	-mod	n/e
18-019	19	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e
18-020	27	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e
18-022	28	-high	-high	-high	-mod	-mod	n/e	n/e	n/e	-high	n/e
18-028	40	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e
19-001	226	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+mod
19005	14	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+low
19-006	44	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+low
19-012	16	-low	-low	-low	-low	n/e	n/e	n/e	n/e	n/e	n/e
19-013	29	-low	-low	-low	-low	n/e	n/e	n/e	n/e	n/e	n/e
20-004	12	-high	-high	-high	-mod	-low	n/e	n/e	n/e	-high	n/e
20-005	12	-mod	-mod	-low	-low	-low	n/e	n/e	n/e	-mod	n/e
20-006	32	-low	-low	-low	n/e	n/e	n/e	n/e	n/e	-low	n/e
21-007	55	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+low
29-001	61	-high	-low	-high	-low	-low	n/e	n/e	n/e	-high	n/e
29-002	32-	-high	-high	-high	-mod	-mod	n/e	n/e	n/e	-high	n/e
29-003	70	-high	-high	-high	-high	-mod	n/e	n/e	n/e	-high	n/e
31-001	38	-low	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e	+mod

Effects are listed as -(negative) or + (positive); low, medium or high; and n/e (no effect). The effects are judged by the following criteria: the current status of the habitat on the unit and the condition of that same unit after proposed action is completed, the presence of known species and, the proximity of the unit to those species.

5. Special Forest Products

a. Affected Environment/Environmental Consequences:

Units 37-5-11(019) and 37-5-14 (001) include areas of good marketable poles and for which there is a demand. The Savage Green EA identified these areas as for pole cutting areas. The North Murphy project proposes to treat portions of these areas as part of a fuel modification zone. The market value of the poles could be lost.

The fuel modification zone in 37-5-25 contains a large amount of madrone suitable for fuelwood. The proposed action would result in the loss of the market value of this forest product.

Proposed Mitigation Measure # 3: Capture the pole and fuelwood product value by completing the pole and hardwood cutting and removal in the above areas before the fuel modification work begins.

6. Fire and Fuels

a. Affected Environment

Hazard is defined as the existence of a fuel complex that constitutes a threat of wildfire ignition, unacceptable fire behavior and severity, or suppression difficulty. Risk is the source of ignition, human or lightning.

A fuel hazard and wildfire occurrence risk rating analysis was completed for the Murphy Watershed which included the lands in the North Murphy proposed project area. For the purposes of this fire and fuel affects assessment, the project area includes all BLM acres in T. 37S., R. 5 W., Sections 3 (195 acres), 5 (78 acres), 8 (80 acres), 9 (520 acres), 10 (198 acres), 11 (262 acres), 13 (510 acres), 14 (275 acres), 15 (640 acres), 17 (360 acres), 22 (232 acres), 23 (640 acres), 24 (360 acres), 25 (130 acres), 26 (440 acres), 27 (80 acres); and T. 37 S., R. 4 W., Sections 17 (409 acres), 18 (620 acres), 19 (529 acres), 20 (200 acres), 21 (195 acres), 29 (257 acres), 30 (13 acres), 31 (261 acres), and 32 (5 acres). This creates a 7,489 acre analysis area of BLM-administered lands. Private lands with the analysis area total approximately 6,207 acres.

Wildfire occurrence risk for the North Murphy analysis area is rated as high overall. The fire risk for all BLM acres is 53 percent HIGH (3,993 acres), 38 percent MODERATE (2,856 acres), and 9 percent LOW (640 acres). Private lands received a HIGH rating on 94 percent (7,020 acres), MODERATE on four percent (312 acres), and LOW on two percent (157 acres). The BLM areas within the high risk level are primarily located adjacent to the private property residential areas and major travel roads. Current risk is primarily due to human presence. Risk is difficult to change or influence through land management activity, as it is a function of weather events (lightning) and human behavior. Reducing public access can reduce human-caused fire and affect risk, but reducing access for fire suppression forces can increase fire size and effects. For the purpose of this analysis, risk is not affected by any activity in this project proposal and is considered unchanged for the 20-year analysis period.

Fuel includes dead and down woody debris and live vegetation. The fuel hazard it creates is dynamic and changes over time and can be altered through land management activities. The natural

process of wildfire occurrence prior to settlement in the 1800's prevented large scale fuels build-up. The fire regime was frequent, low-intensity surface fires which prevented excessive understory vegetation development, and the build-up of large amounts of dead and down woody debris. With human settlement and the suppression of wildfire, fuels have been allowed to accumulate and dense vegetation has grown unchecked. Fuel hazard will increase over time in the absence of disturbance or land management activities which remove or reduce fuels. Without disturbance, fuel hazard conditions become more uniform and continuous. This increases the potential for large, high-severity fire occurrence. Dense, overstocked stands are a contributing factor to large stand replacement fire occurrence due to the closed canopy and ladder fuel presence.

b. Environmental Effects

Fire exclusion has produced a decrease in the acreage of meadow and oak woodland. These areas historically were fire dependent and maintained. Encroachment by conifers and shrub species have replaced and altered these habitat areas.

Table E-2: Hazard Rating by Acres and Percent for BLM Lands Considered in North Murphy Project Area EA			
CONDITION	HIGH HAZARD	MODERATE HAZARD	LOW HAZARD
CURRENT CONDITION	70 % 5,212 acres	27 % 2,016 acres	3 % 261 acres
NO ACTION	84 % 6,291 acres	13% 977 acres	3 % 221 acres
5-10 YEARS			
10-20 YEARS	94 % 7,020 acres	4 % 312 acres	2 % 157 acres
PROPOSED ACTION	58 % 4,329 acres	19 % 1,442 acres	23 % 1,718 acres
5-10 YEARS			
10-20 YEARS	67 % 5,048 acres	28 % 2,069 acres	5 % 373 acres

Table E-2 shows the current fuel hazard condition rating by acres and percent for all acres of BLM land within assessment area. It projects the change in hazard over time, short term (5-10 years and long term (10-20 years) for the current management regime and the Proposed Action. Projections on future hazard are based on current vegetation conditions and known trends of vegetation development in the plant associations. The trend for the next 20-year period is for increasing vegetation density and/or increasing dead and down fuel accumulation. Future management activity is unknown at this time, but it would affect the hazard, so this assessment assumes no future activity. Current Condition is the existing situation at the present (April 1997).

The following assumptions were used in the assessment of effects of treatments on hazard. The time period maximum of 20 years is considered the longest time interval before further management activity would be prescribed. Treatments which harvest timber and/or cut vegetation without treating the slash increase the hazard rating to HIGH. Handpiling and burning reduced the hazard

rating by one factor (e.g., HIGH to MODERATE, MODERATE to LOW). Broadcast burning and underburning reduce the hazard rating to a LOW category. Understory treatments in conjunction with prescribed burning are considered beneficial in both the short and long term, as the effect of ladder fuel reduction and stocking reduction creates a fuel profile that is less susceptible to fire reaching the tree crowns. Stands that are not or will not be at or near mature conditions within the 20-year timeframe are still susceptible to stand replacement from wildfire events due to conditions such as thin bark, high crown ratios, presence or ability to reestablish ladder fuels, and continued stand mortality. The trend in these stands is for treated and untreated areas to increase in hazard as vegetation in the understory increases, crown closure occurs, and dead and down fuels accumulate. For those stands that were underburned and are at or will reach mature conditions within the 20-year timeframe, it was assumed that these stands would remain in the LOW hazard rating. Stands that are currently younger and in mid-serial stage conditions and would not have as much down fuel removed (hand pile burn units), increase in hazard by the long-term period and return to the HIGH and MODERATE rating categories.

The above table includes treatments in the Proposed Action. These include commercial thinning, understory treatment, and prescribed fire use within approximately 1,583 acres; understory thinning and prescribed fire use within 256 acres; prescribed fire use for wildlife habitat, oak woodland, and meadow restoration on 479 acres; and commercial thinning and understory treatment with no prescribed fire use on 101 acres. Actual use of prescribed fire is anticipated to occur on no more than 60 to 70 percent of the 2,419 treatment acres. Additional hazard reduction treatments include approximately 554 acres of Fuel Modification Zone (FMZ) on ridgetop locations, and 212 acres of hazard reduction treatment areas identified as Rural Interface Area (RIA). FMZ will include areas both within the commercial and understory thinning and outside. Both FMZ and RIA will treat the understory vegetation and dead and down fuel loading and will include prescribed fire use.

The current management regime has a negative affect as it continues the current trend of increasing the fuel hazard over time. This alternative does nothing to reverse the trend of increasing fuel hazard. With the absence of natural, low-intensity, frequent fire occurrence, dead and down fuels and live fuels will increase over time. The fuels build up creates conditions that lead to high-intensity, stand replacement fire. The current condition has 38 percent of the area in a high hazard condition. This increases to 60 percent within the short time period due to the large percentage of younger to mid-aged stands and the vegetation trend. High hazard conditions dominate in the 10 to 20 year long-term time frame.

The Proposed Action includes treatments which reduce and remove fuels. The hazard reduction treatments have a positive benefit and shift those acres into lower hazard conditions. The Proposed Action would have a short term (5-10 years) positive affect of reducing the amount of high and moderate hazard from the current combined 97 percent to a combined 67 percent. The amount of lands in the low hazard goes from the current three percent level to 33 percent for short term. The hazard rating returns to near the current level 10 to 20 years after treatment.

Table E-3 shows the hazard rating for private lands within the project area. Change in hazard conditions over time are also projected. Assumptions used are the same for BLM lands (e.g., no hazard reduction or land use activity change). This is included solely to show the total landscape picture. Table E-3 also shows the combination of both BLM and private lands and displays the hazard condition with no treatments. This is included to illustrate future trend if no actions are

taken to alter vegetation and fuel conditions.

Table E-3: Hazard Rating by Acres and Percent for Private Lands Considered in North Murphy Project Area EA			
CONDITION	HIGH HAZARD	MODERATE HAZARD	LOW HAZARD
CURRENT CONDITION- PRIVATE LANDS 6,207 ACRES	30% 1,857 acres	36 % 2,265 acres	34 % 2,085 acres
NO ACTION 5-10 YEARS	36 % 2,237 acres	30% 1,885 acres	34 % 2,085 acres
10-20 YEARS	42 % 2,607 acres	24 % 1,515 acres	34 % 2,085 acres
CURRENT CONDITION- COMBINED BLM & PRIVATE LANDS 13,696 ACRES	52 % 7,069 acres	31 % 4,281 acres	17 % 2,346 acres
PROPOSED ACTION 5-10 YEARS	62 % 8,528 acres	21 % 2,862 acres	17 % 2,306 acres
10-20 YEARS	70 % 9,627 acres	14 % 1,827 acres	16 % 2,242 acres

The effects of hazard reduction treatment in the Proposed Action is beneficial in reducing hazard conditions in both the long and short term. A wildfire occurrence within the treated areas would result in less severe effects due to the reduction in fuel amounts. The removal of dead and down fuel and ladder fuel from the forest areas reduces the amount of fuel available to burn when wildfire occurs in those areas. Wildfire will burn with less intensity, duration, and flame length. The proposed treatments would create areas of lower intensity burning which enable suppression forces opportunities to contain the fire spread. They also provide less fuel to "feed" a large fire and add to its energy. This increases the ability of fire suppression forces to protect forest resources, homes and structures and to limit the size of wildfire. The Fuel Modification Zone creates a potential area to confine a wildfire. This area can provide a location to for suppression forces to initiate holding actions and prevent a wildfire from spreading from one creek drainage into another. Reducing the size and effects from a wildfire would be beneficial in maintaining the forest and visual resources within the watershed, as well as reducing effects on stream and water quality. The RIA treatment areas are designed to provide a buffer area for wildfire spread from BLM lands onto private lands and vice versa. The fuel hazard reduction treatments within these areas will create an area of reduced fire behavior within the forest, woodland, or shrub vegetation type. Because of the reduced fire behavior these areas can potentially be used as locations to stop the spread of a wildfire. Locations were chosen based on proximity to known residential or agricultural structures.

c. Cumulative Effects

The Proposed Action with the proposed hazard reduction treatments has a significant effect on reducing fuel hazard within the project location area. This can be a significant reduction in the hazard level on the sub-watershed basis. Hazard reduction treatments are needed throughout the Murphy Watershed to have a significant effect on the watershed as a system. Within the proposed project area the benefit of the proposed action is lost in the long term. Further hazard reduction treatments and maintenance treatments will be needed to prevent the increase in hazard over time.

When wildfire occurs the potential effects would include a mosaic of fire intensities. A wildfire of 100 acres or larger would exhibit areas of total stand replacement, areas of low intensity underburn with little overstory mortality, and areas with a mixture of both extremes side by side. Location of the extreme fire effect areas would be a function of the presence of steep slopes, hot aspects, amount of fuel present, fuel continuity, presence of ladder fuels, and weather conditions at the time of fire occurrence. Based on current vegetation conditions and topography of the assessment area, it is estimated that 50 to 70 percent of the acreage in a large fire potentially could experience extreme fire effects during extreme fire weather conditions. As a result of the Proposed Action, this extreme effects percentage has the potential to be much lower, and confined mainly to the younger aged stands.

7. Soil/Water

a. Affected Environment

The project area is located in the Lower Applegate Watershed portion of the Applegate Sub-basin. Average annual precipitation is roughly 32 to 42 inches generally in the form of rain with some snow at high elevations. Elevation at the highest points on the ridgelines is slightly less than 4,000 feet. Ridgelines are rolling with steep midslopes. There are four stream drainage areas: Board Shanty Creek, Oscar Creek, Miller Creek, and Caris Creek. These are small stream systems that are predominately intermittent. Soils are predominately Vannoy, Manita, Voorhies on moderately sloping base and footslopes with Beekman, Vermisa, and Colestine on steep and very steep uplands (SCS, Soil Survey of Josephine County). Vannoy, Manita, and Voorhies are deep and moderately deep, well drained silt loam, loam, and very gravelly loam. Beekman, Vermisa, and Colestine are moderately deep and shallow, well-drained and somewhat excessively drained, extremely gravelly loam and gravelly loam. These soils have low to moderate forest productivity.

b. Environmental Effects

(1) Short Term

As helicopter logging would be the predominant method and the only new road to be constructed will be fully decommissioned after hauling, the short-term effects will be negligible overall and minor on a localized, site specific level. Very little soil would be disturbed by the helicopter logging. During the operation, while the newly-constructed spur road (Section 18) and the reconstructed road (Section 18/19) are being used, a late spring or summer storm might result in local erosion. Most sediment from this type of event would not reach stream channels. As these roads are decommissioned, rates of erosion will diminish to negligible. Seasonal hauling restrictions will limit sediment production from natural surface haul roads. However, use of the natural surface roads will loosen and grind surface fines that become vulnerable to erosion. The

spot rocking and road watering PDFs will minimize this effect.

A slight increase in annual stream yield may occur due to the reduction in vegetation resulting from this project. As root zones increase and fill in where vegetation has been removed (less than five years), stream yield would return to current levels.

(2) Long Term

There should be negligible, if any, negative long term effects. This is due to little surface disturbance, quick recovery from any short term effects, and increased litter/duff production to cover any exposed surface. Positive long term effects will be:

a) Increased site productivity due to improved moisture availability, an increase in light to remaining vegetation, and an increase in duff thickness as litter decomposes.

(b) Reduction in fire hazard that will make a hot stand replacement fire less likely than it is now. Hot fires destroy soil organic matter that serves to provide nutrients to the soil and protects the soil mineral surface from erosion.

(c) Increased coarse wood recruitment in the Riparian Reserve (including stream habitat) and on upland sites.

c. Cumulative Effects

Added cumulative effects due to this project are negligible.

8. Fisheries

a. Affected Environment

Water quality in the perennial streams is in fair to good condition. Miller Creek has no fish and high sediment. Miller Creek and lower Caris Creek exceed the amount of sediment for adequate spawning gravels and are greater than 30 percent embedded, which exceeds the ODFW benchmark of 15 percent sand/silt. Miller Creek has 40 percent sand in the stream bed and has no fish, although it is large enough to support fish. The high amount of sediment in the stream probably has inhibited trout reproduction. Much of the sediment in Miller Creek is from six foot stream banks with an incised channel, possibly due to logging practices decades ago. Cutthroat trout are found in Rocky Creek. No fish were found in Caris Creek, probably due to high sediment levels and low water conditions. Steelhead and cutthroat trout are found in Board Shanty Creek. There are no coho salmon in the streams in the project area. Decay Class 1 and 2 coarse woody debris, an important nutrient source for the aquatic system, is limited in the Riparian Reserves.

b. Environmental Effects

The proposed action's improvement of natural surface and surfaced roads will serve to reduce or maintain road sourced sediment levels entering streams. The proposed riparian widths appear adequate for protection of aquatic biota.

9. Timber Sale Harvest Systems
a. Affected Environment

The North Murphy project area has limitations with regard to existing road development and accessibility, creating longer yarding distances for much of the timber sale portion of the project, and is therefore the primary reason for helicopter yarding. Helicopter logging can be a very specialized, and subsequently, expensive logging system, and has been identified as the only logging system for the project area in the proposed action. However, there are opportunities to use cable logging systems adjacent to existing roads and the opportunity to use tractors for yarding on ridgetops and adjacent to landings.

b. Environmental Effects

While helicopter yarding may represent the method with the least impact to soils, the longer yarding distances with the helicopter will translate into a higher appraised cost to yard the logs. This may affect the ability to sell the timber sale. Because of the limited number of helicopter yarding operators, this may also affect the ability to sell the timber sale. Further, logging operators and purchasers with conventional logging systems may be reluctant to bid. Utilizing alternative logging systems where possible, combined with best management practices to mitigate the effects to soils, should lessen yarding costs and make the timber sale more attractive to more purchasers.

Proposed Mitigation Measure # 4: Allow cable yarding in portions of Units 14-3, 17-16, 17-23, 23-8, 23-9, 23-13, and portions of Section 18 adjacent to roads. Mitigation to yarding effects would include limiting cable yarding distances to 500 feet for visuals, minimizing setups to one per landing and at 150 foot distances between corridors where possible, utilizing one-end suspension and lateral yarding of the log, waterbarring yarding corridors, and piling and burning the landing slash.

Further, allow tractor yarding adjacently to landings, roads, and ridgetops on ground less than 35 percent slope. For tractors, limiting size, requiring integral arches and winch systems, designating skid trails, and waterbarring and blocking skid roads will provide adequate mitigation for soil impacts.

These proposed measures should create an opportunity for more purchasers to bid on the sale and lessen yarding costs while providing an economically viable timber sale.

Chapter 4

Agencies and Persons Consulted

A. Public Involvement

All public input was considered by the planning and ID teams in developing the project proposal and in preparing this EA. Changes in the preliminary plan, as well as the proposed project design features, may be based, in part, on information received from the public.

Public scoping was done through letters sent out to interested parties. Along with the letters, The Rogue Institute was hired to do public scoping to capture comments from those living in the area. Kevin Priester contacted residents in the community to identify the range of issues which concerned them about the project and to identify communication opportunities in planning the project. A total of 63 people were contacted from the period of February 7 through March 13, 1997. Of those 63, 33 people wanted to be on the mailing list for additional information. A letter with maps and Table 1 was sent to those 33 people at the end of May.

Two presentations were given to the Applegate Partnership meetings. The first presentation was given on December 5, 1996 at the Applegate School. The presentation covered the project area and preliminary project designs. The second presentation was conducted on February 7, 1997 and covered the proposed project design features in greater detail. Included were the proposed prescription for the project area, hazard reduction projects, including fuel modifications zones and residential hazard reduction areas.

B. Availability of Document and Comment Procedures

Copies of the EA document will be available for formal public review in the BLM Medford District Office. Written comments concerning the EA will be accepted for 21 days after the announcement of the EA availability appears in the newspaper.

Appendix A
Issues outside the scope of North Murphy Forest Management Project

The following issues were raised by the public in the scoping phase of the project and were considered outside the scope of the project:

1. Lack of knowledge (by the public) of location of BLM lands in the area.
2. Availability of permits for hazard tree removal on BLM next to private land.

Source: North Murphy Report: Preliminary Community Issues Related to a Proposed BLM Project; The Rogue Institute for Ecology and Economy (Priester); March 1997

Appendix B

Alternatives Considered but Eliminated During the Interdisciplinary (ID) Team Process

1. No action alternative (continuation of the existing management or condition)

The RMP and its EIS to which this EA is tiered sets out a course of resource management and management objectives. The proposed action is part of the implementation of these objectives.

Appendix C Potential Monitoring

Several topics or areas of potential monitoring were identified during the preparation of the proposed action. These areas of potential monitoring, if pursued, would be in addition the project implementation monitoring or long term effectiveness monitoring outlined in the RMP (Appendix L). While included here, they are not intended as part of the proposed action for this project.

1. Botanical Resource: Initiate a long term (10+ years) monitoring program addressing the effectiveness, in terms of local population abundance and vigor, of the 100' buffers around populations of survey and management plant species in timber harvesting project areas.