ENVIRONMENTAL ASSESSMENT

for the

"3 + 3" Forest Management Project

(EA #OR110-98-19)

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

December 1998

Dear Reader:

We appreciate your interest in the BLM's public land management activities. We also appreciate your taking the time to review this environmental assessment (EA). If you would like to provide us with written comments regarding this project or EA, please send them to Bob Korfhage, Grants Pass Area Manager, at 3040 Biddle Road, Medford, OR 97504.

If confidentiality is of concern to you as you comment, please be aware that comments, including names and street addresses of respondents, will be available for public review or may be held in a file available for public inspection and review. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this clearly state this at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or officials of organizations or businesses, will be made available for public inspection in their entirety.

Robert C. Korfhage
Grants Pass Area Manager

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT

EA COVER SHEET

RESOURCE AREA: *Grants Pass* FY & REPORT # EA Number OR-110-98-19

ACTION/TITLE: *"3 + 3" Forest Management Project*
LOCATION: *T39S, R8W, Sec. 3 & 33; T40S,R8W, Sec. 5*, Willamette Meridian

FOR FURTHER INFORMATION CONTACT:

Robert C. Korfhage
Medford District Office, BLM
3040 Biddle Road
Medford, Oregon 97504
(541) 770-2303

INTERDISCIPLINARY PREPARERS	TITLE	RESOURCE VALUES ASSIGNED
Bob Murray *	Forester	Team Leader, EA Writer, Silviculture, Vegetation, Logging Systems
Kathy Browning *	Forester	Special Forest Products
Laura Finley * / Kip Wright	Wildlife Biologist	Wildlife, Prime or Unique Lands
Matt Craddock	Realty Specialist	Minerals, Lands, and Cultural
Dave Maurer	Soil Scientist	Floodplains, Wetlands, Soils, and Water
Dale Johnson	Fisheries Biologist	Fisheries
Jeanne Klein	Recreation Planner	Recreation, VRM
Doug Lindsey	Engineer	Roads, Quarries, Road Agreements, Easements
Linda Mazzu	Botanist	T&E Plants
Tom Murphy	Fuels Specialist	Fire, Slash Treatment

* Project Planning Core Team Member

GRANTS PASS RESOURCE AREA
"3+3" Forest Management Project
ENVIRONMENTAL ASSESSMENT

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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).

In addition to the documents cited and tiered to, planning the *"3 + 3"* project drew from the ideas and information of the following watershed analyses: Kerby, and East Fork and West Fork Illinois River Watershed Analyses.

B. Purpose and Need for the Proposal

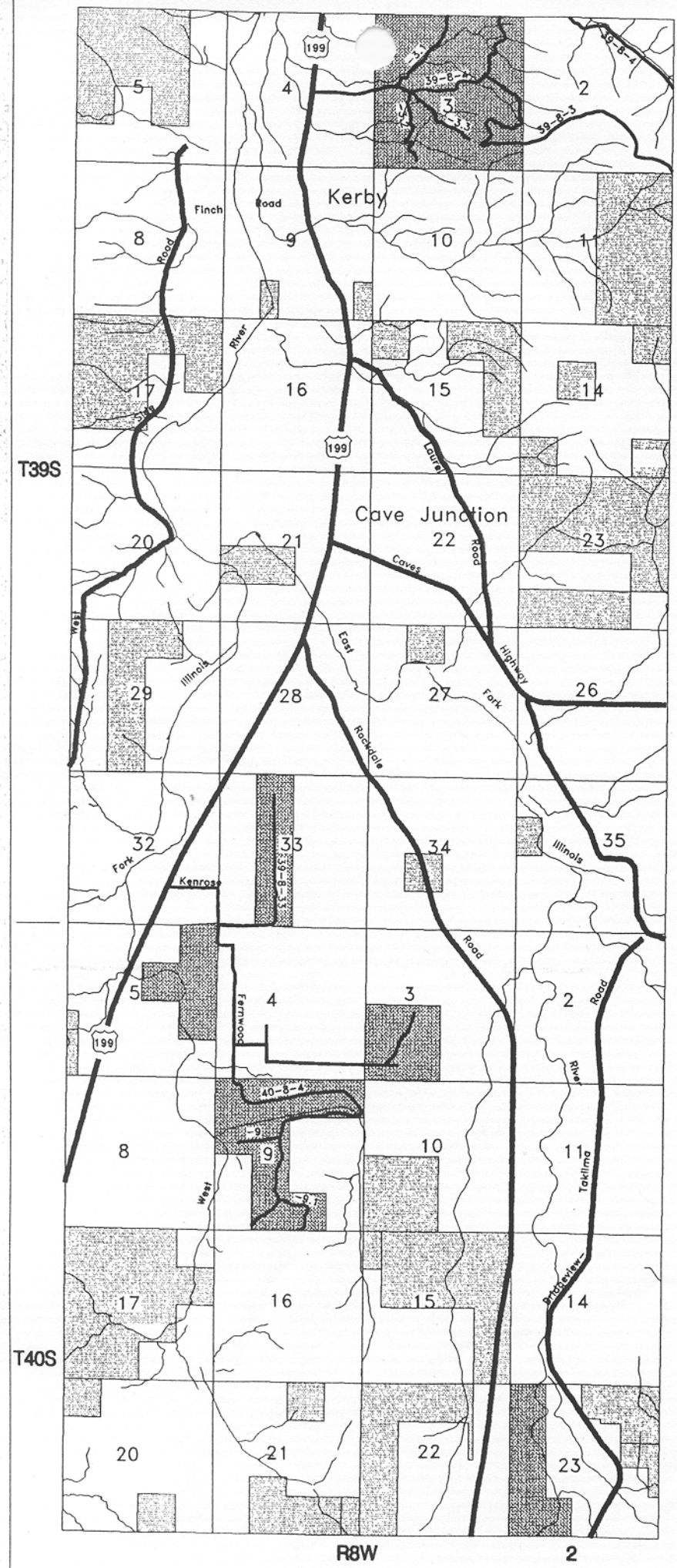
The purpose of the proposed action is to implement the Medford District's Resource Management Plan (RMP). The proposed action is designed to meet a variety of resource and human (social/economic) needs and objectives outlined in the RMP. These include:

- management of the forest land in a manner that will provide for and promote a wide a variety of non-commodity outputs and conditions including wildlife habitats, sustainable forest conditions and recreation opportunities;

- 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.

C. Project Location

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



Map 1

3+3 Forest Management Project

T.39S., R8W., Sec. 3, 33
T.40S., R8W., Sec. 3, 5, 9, 23

Legend

0 1000 2000
Feet

Streams

Major, non-BLM roads

Minor, BLM, and access roads

BLM land

Proposed treatment areas

Chapter 2
Proposed Action / Alternatives

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

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. Many of these issues were used in the design of the proposed project and alternatives (listed below). In some cases an issue was considered at the onset by the planning team and then eliminated from further consideration because it was not judged something that was within the scope of the project or proposed action (summarized in Appendix A).

1. The current high stand densities throughout the project area are resulting in a decline in the amounts of vigorous pine, oak and Douglas-fir.

2. Due to past harvest activities, there is little mature forest habitat and late-successional forest structure in some of the riparian reserves in the project area.

3. Habitat for low mobility late-successional forest species (*e.g*. red tree vole) is limited and highly fragmented across valley bottoms of the East and West Fork of the Illinois River Watersheds.

4. The project is in a rural interface area. Neighbors are concerned that project activities may lead to increased public access and illegal activities on public and adjacent private lands.

5. There is a high fire hazard and risk in the project area due to both high stand densities and the increasing numbers of rural homes adjacent to the project area.

6. There is a high demand for Special Forest Products (*e.g.*, fuelwood, poles, small volume sales) and small timber sales in the project area.

7. Local residents use Section 23 for recreation: hiking, biking, equestrian and river use.

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(s).

2. Objectives of the Proposed Action

a. Land Allocation Objectives

The project area is located in the Matrix Land Allocation and within the Southern General Forest

Management Area of that allocation. Specific objectives for this land allocation are discussed in the RMP-ROD (p. 38-39).

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) Harvest timber to meet BLM's commitment to provide forest resources to the local economy. Design the stand treatments with due regard to the economic aspects of harvesting / marketing small diameter conifers and hardwoods over the short and long term through the Special Forest Products Program. (*Note*: In this EA "Special Forest Products" is used to refer to small quantity sales of manzanita, fuelwood, poles and timber in both the short and long terms.)

2) Implement fuel hazard reduction treatments focusing on areas of higher risk, along property lines, rural residential interface areas and along roads.

3) Commercial thin and precommercially thin stands to reduce density thereby increasing tree growth, quality and vigor of remaining trees.

4) Maintain and restore pine/oak plant communities on pine/oak sites.

5) Create protection buffers for low mobility late-successional forest species (red tree voles).

6) Accelerate the successional trends of the early/mid seral riparian vegetation towards mature/older seral conditions.

7) Limit entry over the project area to avoid increase in public activity near or on adjacent private property.

8) Incorporate and design treatments sensitive to the current recreation use in section 23.

3. Description of the Treatment Alternatives

a. Alternative 1 - No Action

The "no-action" alternative is defined as not implementing any aspect of the other proposed alternatives. The no action alternative thus also serves as a baseline or reference point for evaluating the environmental effects of the action alternatives. Inclusion of this alternative is done without regard to whether or not a no action alternative is consistent with the Medford District RMP.

The no action alternative is not a "static" alternative. Implicit in it is a continuation of the current trends in the project area. This would include trends such as vegetation succession with consequent wildlife habitat changes, deterioration of road conditions, current rates of erosion, continuation of current road densities, trends in fire hazard changes, OHV use, *etc*..

b. Alternatives 2 & 3

Two action alternatives are presented. They differ with regard to red tree vole (RTV) buffers. The current draft interagency red tree vole survey protocol and management strategy links the creation of buffers to habitat condition thresholds determined on a fifth field watershed scale. Both West and East Fork Illinois River watersheds are above the 40 % habitat condition thresholds. Consequently, the creation and maintenance of buffers around red tree vole colonies is optional. Alternative 3 implements RTV buffers, alternative 2 does not. Alternative 3 is based on habitat distribution patterns and recommendations from management guidelines. It proposes the following buffers: Section 5 - one acre of unit 5-2 tied into a riparian reserve; Section 33 - two site tree radius, (approximately 320 feet - 2 acres) affecting east side of road 39-8-33 in unit 33-2; and Sec. 3 - two 10 acre buffers that affect approximately 8 acres of unit 3-1.

The proposed treatments are shown on Map 2 in Appendix C.

1) Timber Harvest

Table 1 outlines the proposed timber harvest. As noted in Table 1, Alternative 2 is the same as Alternative 3 except with regard to red tree vole buffers. Where Alternative 3 differs with Alternative 2, Alternative 3 features are shown in *italics*.

2) Silvicultural Treatments

Table 1 summarizes the proposed silviculture treatments. A unit specific silviculture prescription has been prepared and is available upon request.

In addition to the land allocation and project design objectives listed above, the silviculture system objectives include:

— Promote the development of mature forest conditions by: (1) precommercial thinning and/or slashing of dense pockets of conifer/hardwood reproduction; (2) removing slow-growing suppressed, intermediate, and some co-dominate, dominate trees; and (3) utilizing variable density thinning where needed.

— Preserve the existing pine/oak component and restore and increase the extent of pine/oak vegetation type by creating stand conditions that will maintain and develop pine/oak on sites ecologically suited for it.

Two silvicultural systems are proposed: commercial and precommercial thinning. The objective of *commercial thinning* is to harvest timber in a manner that captures the wood volume on all size classes of trees and redistributes the growth to residual trees, or in some instances, releases conifer reproduction. Commercial thinning stands on the “3+3" project area will:

- reduce overall tree density to encourage and increase growth of the remaining trees (conifer and hardwood);
- in some areas, shift species composition away from fire-intolerant species toward fire-tolerant, shade intolerant species;
- recover some of the potential mortality while leaving the best, and generally more

dominant naturally selected trees in the stand compatible with maximum production. (maximum production includes stand attributes such as crown development, volume, longevity, and other values such as nutrient cycling and species diversity);
- provide a continuing and future long-term source for large down woody material and snags;
- maintain untreated pockets within harvest areas for structural diversity.

Precommercial thinning (PCT) would treat conifer and hardwood trees and shrubs. PCT reduces understory vegetation stocking to allow for less competition for nutrients, water and light, and to reduce fuel hazard. Uncut trees would be spaced out to widths ranging from 15 feet to 25 feet between understory leave trees. Trees and shrubs between 1" and 6" DBH would be treated. Trees greater than 6" DBH and less than 12" DBH would be girdled where they are not harvested and exist in excessive amounts. All trees greater than 12" DBH are considered reserved trees. Criteria for selection of leave trees is included in the Silvicultural Prescription.

3) Stand Treatment Time lines

The general anticipated time line for implementation of this proposed action would be as follows:

- an advertised timber sale would be scheduled for harvesting in T40S, R8W, Sections 5, 33, and T39S, R8W, Section 3 for the latter part of FY 1999 or later;
- slash treatment associated with timber harvest will generally take place within one year of harvest, (completion for hand pile and burn);
- Implementation of "Special Forest Products units" proposals would be structured to provide small contract opportunities. It is envisioned that these would be offered through a series of smaller contracts over a ten to fifteen year period. In order to insure timely completion of the silvicultural work / objectives the treatment of each unit will be completed within three years of when started. If the requisite stand treatments could not be accomplished within three years of when started the small contract approach would not be pursued and final thinning and fuel hazard reduction work will be completed using a “traditional” large contract approach. Because of long term nature of project, additional botanical and wildlife surveys could be necessary after three years.

4) Fuels Management Treatments

<u>Hand Piling and Burning (HP)</u> is designed to remove approximately 50 - 75% of the fuel between 1 and 6" in diameter and greater than 2 feet in length. Fuel outside this size range is left untreated, however some smaller fuels are included in the piles to create optimal ignition conditions. Piles are covered to create a dry ignition point and piles are burned in the fall to winter season after 1 or more inches of precipitation has occurred. Piles are burned during this season to reduce the potential for fire to spread outside each pile, and to reduce the potential for scorch and mortality to the residual trees and shrubs.

<u>Understory Burning or Underburn (UB)</u> is the application of prescribed fire within areas where residual trees and shrubs are present. The prescribed fire objective is to reduce tanoak, the amount of "ladder" fuels present, and the fuel hazard for both dead and down woody material. Ladder fuels consist of both live or standing dead vegetation such as shrubs and small trees in the understory and live and dead branches close to ground level on overstory trees. Understory burning is conducted at anytime throughout

the year when fuel and weather conditions will permit the successful achievement of resource objectives. Typically burning is conducted from Fall through late Spring. Summer or early Fall burning is less common, but can be feasible when needed to meet resource objectives and when escape fire risk can be mitigated. A Prescribed Fire Plan is prepared that includes both resource and fire objectives. Fuel moisture and weather parameters are developed based on these objectives. The timing of the burn is based on achieving these objectives, occurrence of the parameters, predicted weather, and the availability of adequate fire suppression resources as a contingency plan in the event of fire escape. Prescribed fire effects can include mortality in both the overstory and understory vegetation. The Prescribed Fire Plan includes acceptable mortality levels. These levels typically limit overstory mortality to 10-15% or less, and understory mortality to 20-50% or less depending on resource objectives. When prescribed fire is used to "thin-out" understory vegetation (as opposed to thinning with chainsaws) the higher acceptable percentages of mortality would apply. An underburn treatment prescription can range from burning 30% of the area up to 90% of the area (a "mosaic" burn).

5) Riparian Reserve Treatment

Riparian area treatment objectives include maintenance and enhancement of riparian areas where the number of large diameter trees, both conifer and hardwood, is low. Several treatments within riparian reserves are proposed under this action. The intent of the treatments is to facilitate the development / restoration of older forest conditions while at the same time meeting the Aquatic Conservation Strategy objectives (ACSO). In order to begin to maintain and restore the diversity and complexity of the aquatic system it is essential that the adjacent forest be able to contribute coarse wood, shade, nutrient (litter) input, sediment filtration and stream bank stability. At the same time the riparian reserves provide habitat and connectivity for dispersal of species associated with late-successional forest across the landscape.

To maintain or develop a multi-canopied forest with large trees and the potential to meet the above, the following objectives are included:

(*a*) commercial thinning to reduce the competition within the co-dominant, subdominant class to hasten the development of large conifers for the intermittent streams in the Kerby area (T39S, R8W, Sec.3), adjacent to the perennial stream next to the West Fork Illinois River, and along the West Fork Illinois River while maintaining the micro-climatic conditions to the greatest extent possible, (all above have varying no treatment zones). The long-term goals as stated in the Kerby and West and East Fork Watershed Analyses is the restoration of large trees and older forest to their range of historic natural variability, to provide shade, coarse wood, increase nutrient (litter) production, and habitat for late-successional forest species. (Currently the West Fork Watershed riparian acres in an older forest condition is 9 %. The historic condition is estimated to be 35-45 % on Siskiyou National Forest Land.)

(*b*) precommercial thinning/slashing to accelerate growth of young forest and reduce fire hazard in the Kerby, East and West Fork Illinois riparian reserve areas.

(*c*) within riparian reserves maintain a "no treatment" buffer along streams to provide for bank stability and sediment filtration. The width of these buffers will vary depending on stream class, slope, and current stand conditions (see Table 4-Riparian Reserve Widths).

(d) maintain a diversity of tree species suitable to the site. Reserve all trees 20"DBH or greater.

3 + 3 FOREST MANAGEMENT PROJECT
Table 1: Summary Description of Alternative 2 & 3
(Where alternative 3 differs from Alternative 2, Alterative 3 is shown in italics.)

T-R-SEC	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Seral Stage		Silv. / Harvest Prescription	DBH Range		Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
					Current	Post Harvest		Stand (in)	Harvest (in)				Harv./ Treat. Acres	Vol / Ac	Total		
TIMBER HARVEST																	
T39S,R8W																	
Sec. 3	3-3	Matrix & Rip. res.	RTR	95	Early/Mid	Early/Mid	CT/MGS/PCT	4-32	8-24 (Rip. Res 8-20)	T	PCT1,SLB,HP,MSB	16	29	1.5	43	No	CT 12 acres, PCT 22 acres riparian res. Manzanita harvest
Sec. 33	33-1	Matrix	RTR	24	Early 40% MId 20% Mature 40	Early 40% MId 20% Mature 40	CT/MGS/PCT	4-40	8-28	T	*PCT1,SLB,HP,MSB*	24	24	2.0	48	No	Public firewood
	33-2	Matrix	RTR	49	Mid 80% Mature 20	Mid 80% Mature 20	CT/MGS/PCT	4-40	8-28	T	*PCT1,SLB,HP,MSB*	20	49 *(47)*	2.0	98 *(94)*	No	Public firewood. ***Alternative 3***
T40S,R8W																	
Sec. 5	5-1	Matrix & Rip. Res.	RTR	43	Early 10% Mid 70% Mature 20	Early 10% Mid 70% Mature 20	CT/MGS/PCT	4-40	8-28 (Rip. Res 8-20)	T	*PCT1,SLB,HP,MSB*	*22*	37	1.4	52	No	CT 5 acres, PCT 2 acres in riparian reserve. Gross yard public firewood.
	5-2	Matrix & Rip. Res.	RTR	20	Mid 60% Mature 40	Mid 60% Mature 40	CT/MGS/PCT	4-60	8-28 (Rip. Res 8-20)	T	*PCT1,SLB,HP,MSB*	30	20 *(18)*	3.0	62 *(54)*	No	CT 6-8 acres (6 W.Fork Ill.) PCT 2acres in riparian res. ***Alternative 3***
TOTALS - Timber Harvest				**231**									**159**		**301**		

3 + 3 FOREST MANAGEMENT PROJECT
Table 1: Summary Description of Alternative 2 & 3
(Where alternative 3 differs from Alternative 2, Alterative 3 is shown in italics.)

T-R-SEC	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Seral Stage		Silv. / Harvest Prescription	DBH Range		Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
					Current	Post Harvest		Stand (in)	Harvest (in)				Harv./ Treat. Acres	Vol / Ac	Total		
SPECIAL FOREST PRODUCTS W / SMALL TIMBER HARVEST																	
T39S,R8W																	
Sec. 3	3-4	Matrix & Rip. res.	RTR	111	Early/Mid	Early/Mid	CT/MGS/PCT	4-32	8-24 (Rip. Res 8-20)	T	*PCT1,SLB,HP,MSB*	16	37	1.5	55	No	CT 12 acres, PCT 41 acres riparian res
	3-5	Matrix & Rip. res.	RTR	76	Early/Mid	Early/Mid	CT/MGS/PCT	4-32	8-24 (Rip. Res 8-20)	T	*PCT1,SLB,HP,MSB*	16	18	1.0	18	No	CT 3 acres, PCT 15 acres riparian res. Manzanita harvest
	3-6	Matrix & Rip. res.	RTR &RMR	52	Early/Mid	Early/Mid	CT/MGS/PCT	4-32	8-24 (Rip. Res 8-20)	T	*PCT1,SLB,HP,MSB, UBWO*	16	14	1.5	21	No	CT 2 acres, PCT 9 acres riparian res.
	3-7	Matrix & Rip. res.	RTR	80	Early/Mid	Early/Mid	CT/MGS/PCT	4-32	8-24 (Rip. Res 8-20)	T	*PCT1,SLB,HP,MSB, UBWO*	18	16	1.5	24	No	CT 10 acres, PCT 19 ac riparian res.
	3-8	Matrix & Rip. res.	RTR	56	Early/Mid	Early/Mid	CT/MGS/PCT	4-32	8-24 (Rip. Res 8-20)	T	*PCT1,SLB,HP,MSB, UBWO*	16	13	1.5	20	No	CT 2 acres, PCT 15 acres riparian res. Whiteoak restore Manzanita harvest
	33-3	Matrix	RTR	12	Mid 85% Mature 15	Mid 85% Mature 15	CT/MGS/PCT	4-40	8-28	T	*PCT1,SLB,HP,MSB*	15	12	2.0	24	No	
	33-4	Matrix	RTR	22	Early/Mid	Early/Mid	CT/MGS/PCT	4-32	8-24	T	*PCT1,SLB,HP,MSB*	22	16	1.0	16	No	
	33-5	Matrix	RTR	27	Early/Mid	Early/Mid	CT/MGS/PCT	4-20	8-16	T	*PCT1,SLB,HP*	27	10	.5	5	No	
T40S,R8W																	

3 + 3 FOREST MANAGEMENT PROJECT
Table 1: Summary Description of Alternative 2 & 3
(Where alternative 3 differs from Alternative 2, Alterative 3 is shown in italics.)

T-R-SEC	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Seral Stage		Silv. / Harvest Prescription	DBH Range		Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
					Current	Post Harvest		Stand (in)	Harvest (in)				Harv./ Treat. Acres	Vol / Ac	Total		
Sec. 3	3-1	Matrix	RTR	36	Mid	Mid	CT/MGS	4-40	8-28	T	SLB,HP,MSB	22	36 *(28)*	1.5	54 *(42)*	No	***Alternative 3****-Red Tree Vole buffers*
	3-2	Matrix	RTR	49	Early 20% Mid 70% Mature 10	Early 20% Mid 70% Mature 10	CT/MGS/PCT	4-40	8-28	T	*PCT1,SLB,HP,MSB*	10	40	.5	20	No	White Oak/Pine type in extreme southeast(PCT)
Sec. 9	9-1	Matrix	RTR	22	Mid	Mid	CT/MGS/PCT	4-32	8-28	T	*PCT1,SLB,HP,MSB*	15	20	1.5	30	No	
Sec 23	23-1	Matrix & Rip. res.	RTR	25	Early 20% Mid 80%	Early 20% Mid 80%	CT/MGS/PCT	4-20	8-14	T	*PCT1,SLB,HP,MSB*	8	25	.5	12	No	PCT/SLB 3 acres in E. Fork Rip. res.
TOTALS-SFP w /HARVEST				**568**									**257**		**299**		
UNDER BURN																	
T40S,R8W																	
Sec. 3	3-9	Matrix	RTR	36			UB				*SLB,UB*						
GRAND TOTALS - ALL TREATMENTS				**835**									**424** *(412)*		**600** *(576)*		***Alternative 3***

3 + 3 FOREST MANAGEMENT PROJECT

Table 1: Summary Description of Alternative 2 & 3

(Where alternative 3 differs from Alternative 2, Alterative 3 is shown in italics.)

T-R-SEC	Unit #	Land Alloc. (NFP)	TPCC	Unit Acres	Seral Stage		Silv. / Harvest Prescription	DBH Range		Logging Systems	Slash Treatment -- Understory Treatment	Unit Timber vol. (Est) (MBF / ac)	Harvest Volume (est) MBF			Reforestation Needed	Comments
					Current	Post Harvest		Stand (in)	Harvest (in)				Harv./ Treat. Acres	Vol / Ac	Total		

Footnotes:

SLD - Slash sprung and damaged conifers and hardwoods 1"-6" DBH. SLB - Slash brush species. UB - Underburn, mosaic or spot broadcast burn under reserved overstory. UBWO - Underburn white oak stand. HP - Hand pile slash 1"-6" x 2', cover, and burn piles. PCT - Precommercially thin conifers to approximately a sixteen (16) foot by twenty-five (25) 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. MGS - Group Selection. T - Tractor. C- Cable. MSB-Mechanical Slash Buster

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.

2) Stand Successional Stage: *Early* - Vegetation is dominated by shrubs or conifers and hardwood trees in a seedling/ sapling size class (<5"DBH)

Mid - Vegetation is tree dominated. Trees at least small pole size (>4"DBH). Larger scattered trees may be present.

Mature - Forest has begun to differentiate into distinct canopy layers. Overstory dominant and codominant trees are conifers greater than 20" DBH, understory trees will be conifer-hardwood mix.

Old Growth - Stand is multilayered and has at least two distinct canopy layers. Large conifer trees greater than 35" DBH number 8+/ac.

3)Harvest acres vs. Unit acres: The difference in these acreages is attributable to large variability within the unit, unit inclusions of non-merch precommercial thin type, riparian reserves, non-forest, etc.

c. Road use, construction, renovation, improvement and maintenance

Table 2 lists the roads that would be used, constructed, improved, renovated, maintained and/or closed as a part of this proposed project.

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

Road #	Seg.	Miles	Current surface	Control	Proposed Action	Comments (See Map 3 for road segment locations)
40-8-4	A	0.15	GRR	BLM	M	
40-8-3		0.13	NAT	BLM	M	
40-8-3.1		0.45	NAT	BLM	M	
40-8-3.2		0.23	NAT	BLM	M	This road junctions right from MP 0.26 on 40-8-3.1. The first 300' is along an existing spur. The next 300' is new construction. The final 600' is along an existing spur. This road would be waterbarred upon completion of contract work requiring use of this road.
Op spur		0.20	NAT	BLM	C,M	This new construction spur in the SW1/4 of Sec. 3, T.40S., R.8W., Will. Mer. is proposed for full decommissioning by BLM road crews following completion of project work.
Op spur		0.17	NAT	BLM	M	This existing spur in the SW1/4 of Sec. 3, T.40S., R.8W., Will. Mer. is proposed for full decommissioning by BLM road crews following completion of project work.
40-8-5		0.83	NAT	BLM	M	An easement is needed for access to BLM managed lands off of Cascade Road in the NE corner of section 5. A temporary culvert is proposed for installation at MP 0.31 for summer haul . The curve at MP 0.36 will need to be improve for timber haul.
40-8-15		0.93	NAT	BLM	M	
39-8-33		1.26	NAT	BLM	M	There are two operator spur roads and a power line road at the end of 39-8-33, these roads will be used under this proposed project. The spur to the right is an existing spur for a length of 0.10 miles. The spur to the left is new construction for a length of 0.07 miles. Both spurs would be fully decommissioned by BLM road crews following completion of project work. The existing powerline road is 0.15 miles and will be waterbared upon completion of contract work requiring use of this road.
39-8-4	A	1.33	BST	BLM		This is a two lane BST road maintained by the County.
39-8-4	B	0.50	BST	BLM		This is a two lane BST road maintained by the County.
39-8-3	A	0.25	PRR	BLM	M	
39-8-3.1		0.63	NAT	BLM	M, FD	This road is proposed for full decommissioning upon completion of contract work requiring use of this road. (Contingent upon the concurrence of a Reciprocal R/W Agreement partner.) Barricade and plant trees.
39-8-3.2		0.49	NAT	BLM	M	A gate is proposed where roads 39-8-3.2 and 39-8-3.3 junction with road 39-8-4. (Road covered by a Reciprocal Road R/W Agreement)

Table 2: Road Use, Construction, Improvement, Renovation, Maintenance, and Closures						
Road #	Seg.	Miles	Current surface	Control	Proposed Action	Comments (See Map 3 for road segment locations)
39-8-3.3		0.54	NAT	BLM	M	A gate is proposed where roads 39-8-3.2 and 39-8-3.3 junction with road 39-8-4. (Road covered by a Reciprocal Road R/W Agreement)
39-8-3.4		0.50	NAT	BLM	M, R	Waterbar as needed.
OP Spurs		1.31	NAT	BLM	M, FD	There are 7 existing operator spurs located in T.39S.,R.8W., Sec.3, Will. Mer. These spurs are proposed for full decommissioning by BLM road crews following completion of project work. The spur to the left of 39-8-3.4 is 0.06 existing and 0.06 new construction.
Powerline		0.30	NAT	BLM	M	The existing powerline road along the west section line in the NW1/4 will remain in its existing condition upon completion of contract work requiring use of this road.

NAT =Natural Surface; PRR =Pit Run Rock; ABC =Aggregate Base Coarse; ASC =Aggregate Surface Coarse; BST =Bituminous Surface Treatment
C =Construct; FD =Full decommissioning; R =Renovate; M =Maintenance

Maintenance consists of surface blading, roadside brushing for safety, spot rocking and maintaining existing drainage structures. Maintenance of natural surface roads also includes correcting drainage and erosion problems (*e.g.*, improving or installing water dips, installing other drainage structures where needed, eliminating outside road edge berms or other features that are obstructing drainage). Maintenance could occur before, during and/or after road use that occurs as a part of the project.

Renovation consists of reconditioning and preparing the subgrade for heavy truck use, cleaning and shaping drainage ditches and structures, and trimming or removing vegetation from cut and embankment slopes.

Full *decommissioning* consists of subsoil ripping of the roadbed to promote the establishment of vegetation and promote drainage consistent with the surrounding undisturbed areas. Existing culverts will be removed during full decommissioning to restore a natural hydrologic flow.

Use a mixture of native perennial grasses, annual grasses and legumes where erosion control is needed.

Drainage ditches would be cleaned of debris allowing an unobstructed flow and avoiding disturbance of vegetation (grasses) that are helping to stabilize the ditch line.

All roadside brushing would be performed either (a) mechanically with self powered, self propelled equipment designed to cut brush and/or (b) manually with hand tools, including chain saws.

d. Habitat diversity retention

Throughout the upland portions of the project area where qualifying trees are available, retain as a part of the residual stand an average of 3 of the largest trees / acre that show evidence of decay or near term mortality. Within the riparian reserves where there is thinning proposed, an average of 5 such trees per acre would be retained. This will provide a recruitment pool for short term snag creation as well a

provide habitats for species that use decayed or limby green trees. It also provides for long term snag and down wood requirements. These will also contribute to the long term coarse woody material / organic material for the soils.

In section 3 (39S-8W), retain 10% of the uplands acreage and 20% of the riparian reserves (where thinning is proposed) in an unthinned condition. Unthinned areas would be 1/4 to 1 acre in size and distributed throughout the proposed treatment areas. Areas within the proposed treatments areas that would not be thinned due to skid trial / stream crossing access or for other reasons would be considered as contributing in their entirely towards this 10 or 20% (*i.e.*, areas exceeding 1 acre contribute fully to the unthinned acreage goal). This will provide a spatial diversity of thinned - unthinned areas to the advantage of species such as wood rats and neotropical bird species.

4. Project Design Features

Project design features (PDFs) are included in the proposed action for the purpose of reducing anticipated adverse environmental impacts which might stem from the implementation of the proposal. The PDFs noted below would be a part of the previously outlined action alternatives (Alternatives 2 & 3), unless otherwise noted.

a. Logging Systems

Only ground based logging systems are proposed. To reduce the extent of ground disturbance and soil compaction, yarding tractors would be limited to the smallest size necessary to do the overall job. Tractors would be equipped with integral arches to obtain one end log suspension during skidding of the logs. Tractors or any other ground equipment would be restricted to approved skid trails. Tractor logging would be restricted to slopes less than 35%. Tractor-type logging equipment would not be authorized when soil moisture content at a six-inch depth exceeds 20% by weight, as determined by a Speedy Moisture Meter.

All tractor skid roads would be water barred in a manner appropriate to the slope and soil type. Tractor skid roads will be ripped when compacted area exceeds 10% (area basis) of any given unit. All major skid trails will be subsoiled. Main tractor skid trails would be blocked where they intersect haul roads.

Within riparian reserve areas, existing skid trails would be used if consistent with the BMP's (Best Management Practices outlined in the Medford District RMP). Not all old trails would necessarily be used since some may have been poorly located originally. New skid trail locations may be necessary, but the goal is to minimize them and to keep the overall extent to 6% of the area or less. (This equals 50% of BMP allowable.) Locations will be in outer half of riparian reserve, perpendicular to stream, and away from designated riparian zones/stability breaks for T38S-R8W-Sec 3. Residual canopy levels would not be reduced to accommodate skid trails. Tree length lining for short distances, coupled with directional felling may negate the need for new skid trails in some instances. Some intermittent stream crossings will be necessary in T39S,R8W, Section 3 (2 to 3 existing crossings). The crossings would be located so as to minimize impacts, would only be used in dry conditions and would be used for one season only and then waterbarred and seeded.

Landings will be limited to 1/4 acre in size for ground based systems.

b. Seasonal Operation Restrictions

Table 3 outlines the seasonal operating restrictions that would apply:

Table 3: Seasonal Operating Restrictions

Location	Restricted Activities	Restricted Dates (operations not permitted between:)	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.*
Any discovered spotted owl nest sites	*All timber harvest activities (felling and yarding), chainsaw operation and prescribed burning*	*March 1 to June 15 (for disturbance). March 1 to Sept. 30 (for habitat removal)*	*Dates and restriction dependent on nesting status. (Rogue River/South Coast Biological Assessment, Aug. 1996)*
Entire sale area - 1/4 to ½ 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) .*
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).*

Some variations in these dates would be permitted dependent upon weather and soil moisture conditions.

c. Slash Treatment and Burning/Fuel Treatment and Prescribed Fire

Prescribed fire and non-fire treatments are designed to meet vegetation management, hazard reduction, and site preparation objectives. Slashing of understory vegetation and prescribed fire use would shift competitive advantage for nutrients and water to desired leave vegetation by reducing surplus vegetation which competes with understory conifers, and reduce competition influencing mortality rate among overstory pine and hardwood species. Size limits on slashing are designed to limit the impacts of these target species but not eliminate their presence as a stand component.

Prescribed fire plans include design features to diminish any potential of fire escape from control lines. These features must be in place before burning is permitted to occur. Features include: prescribed weather and fuel moisture conditions which produce fire behavior which can be readily controlled by direct attack; specified numbers of people and equipment required for holding forces; and escape contingency requirements such as the availability of backup forces, both locally and regionally.

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 a majority of the burn area. It would create a mosaic burn effect which would result in up to 20-30% of the total burn treatment area with minimal to no fuel consumption. This is to reduce the loss of large woody debris, organic mater , 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 plants during active growth. All harvest units would be re-evaluated 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 would be recommended.

Mechanical Slashing: Mechanical thinning/slashing (*e.g.*, a Mechanical “Slash Buster”) could be used if Special Forest Products harvest methods (small tractors/ATV’s/small trucks) fail to accomplish objectives, or as an alternative to understory treatments. Mechanical slashing would not take place in riparian zones. Mechanical slashing would be done in dry season when soil moisture content (6" depth) is 15% or less. Machine will operate on top of slash where feasible to minimize soil disturbance and compaction.

Prescribed Fire Escape: To prevent fire from escaping control and to minimize potential damage to overstory trees, burning would occur during the late fall to early spring season when weather and fuel conditions allow the least active fire behavior.

Fireline Construction is used in broadcast and understory burning. Construction would be accomplished solely by hand method. No tractor fireline would be constructed for prescribed burning. Hand fireline would be constructed on BLM lands. Waterbarring would be used on all fire trails where the slope exceeds 10% in order to control water runoff and limit potential erosion.

Patrol and Mop-up of burned areas would occur to prevent areas from reburning and becoming escape fires. A helicopter with water bucket may be used during mop-up to aid in extinguishing larger burning fuels and internal reburning in islands of unburned fuels.

d. Roads - Construction, Improvement, Decommissioning, Closures

All new road construction and improvement would be done at the minimum standard appropriate to the intended long term use of the road. 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 for after burning is complete.

e. Dust Abatement

Dust created from log hauling traffic on all roads would be abated in order to reduce driving hazards and on rocked roads where necessary to protect the fine surfacing materials which bind the road surface rock thus increasing its longevity. Dust abatement would be in the form of water or lignin.

f. Stream and Riparian Habitat Protection

Riparian reserve widths would conform with the Standards and Guidelines in the NFP (p. C-30) and the RMP. Table 4 indicates the riparian reserve widths for this project proposal.

Table 4 - Riparian Reserve Widths

Area	No cut widths (distance from stream channel)	Stream Class	Riparian Reserve Width** (ft)	Notes
T39S,R8W,Sec 3	to stability break	intermittent (class 4)	150	stability break will vary - approx 20 - 75' .
T40S,R8W,Sec 5	varies by topog & tree vole nests	perennial-resident (class 2)	380	Varies from approx. 50 - 80'
T40S,R8W,Sec 5	50	West Fork Ill. River - (class 1)	380	CT-comm. thin Some 1-7" slash
T40S,R8W,Sec 23	40	East Fork Ill. River - (class 1)	340	PCT - precom thin

** Widths are **each side of stream** and are determined in accordance with BLM Instruction Memo OR-95-075 (3/30/95).

g. Wildlife Trees and Dead and Down Material

All snags greater than 10" DBH would be reserved from cutting and removal in all units, unless they pose a safety hazard. Should it be necessary to fell a snag due to worker safety concerns, the snag would be left in the unit. All pre-existing down woody material would be retained on the sale area. In firewood use areas existing down wood greater than 16" diameter and greater than eight feet in length with potential for firewood use would be retained on the site.

In Alternative 2 harvest trees would be directionally felled away from red tree vole nest trees.

h. Botanical Resource Protection

Special status vascular plant surveys (including Survey and Manage vascular plants) have been completed in accordance with approved protocols. (See Chapter III for survey findings)

If any additional 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 with a minimum of 100-foot radius around each population. On *Cypripedium spp*. 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 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 this EA is tiered to.

B. Site Specific Beneficial or Adverse Effects of the Alternatives

1. Resource: Soils and Hydrology

a. Affected Environment

This project is scattered on six sections of land located in three sixth field watersheds (6thFW) within three fifth field watersheds. The 6thFW's are the Lower East Fork of the Illinois (section 23 and most of section 3, 40-8W), Lower West Fork of the Illinois (sections 33, 5, and 9) and Kerby (section 3, 39-8W). Generally the 6thFW's are characterized by long somewhat wide valley bottoms with moderately steep ridges on three sides. The Kerby 6thFW is an exception as it has short narrow bottoms. Highest elevations are generally 4,000 to slightly over 5,000 feet. Valley bottoms average about 1,200 to 1,500 feet elevation. Main streams meander in the valley bottoms with class 3 and 4 tributaries that flow off the ridge slopes. Precipitation occurs in the form of rainfall with some snowfall at higher elevations and averages 58 to 70 inches annually.

Soils (SCS, Soil Survey of Josephine County) in the project areas are predominately Josephine on moderate to steep slopes, Pollard on moderate slopes in section 3 (T39S-R8W), Abegg and Pollard on gentle to moderate slopes in all the remaining sections. Josephine is deep, well drained, gravelly loam over clay loam. Pollard is deep, well drained, loam over red clay. Abegg is deep, well drained, gravelly loam over very gravelly clay loam. These soils have moderate to high forest productivity.

The Illinois River (Briggs Creek to confluence of the East and West Forks) and East and West Forks of the Illinois River are Water Quality Limited streams (303(d) listed) due to flow modification (irrigation withdrawals) and warm summer temperatures. The *"3+3*" project proposal should have no effect on either of these parameters.

In section 3 (39S-8W) there is an unusually high density of Class 4 streams and stream/road crossings (14). Current road density in the section is 5.7 miles per square mile with approximately half of them unblocked and natural surfaced. Road 39-4-8 is paved. The intermittent streams funnel seasonal surface runoff into the Kerby Ditch which flows into the Illinois River. Stream/road crossings are typically sediment sources to streams.

The estimated road density for Holton Creek area is very high: 13.7 miles per section. Most likely, the road densities throughout the project area are high to very high, given the overall intensive rural use of the non-BLM lands.

b. Environmental Effects

(1) Short and Long Term

The following table provides ratings for local effects for the various practices within the alternatives:

Table E-1: Summary of Soils effects

6thFW	Term	Type of Effect	Alternative 1	Alternative 2 & 3
LOWER EAST FORK OF ILLINOIS RIVER	Short (1-5 yrs)	Disturbance / Erosion	0	Minimal -
		Added Compaction	0	Slight -
		Productivity	0	Minimal -
		Sedimentation from haul roads	0	Minimal -
	Long (5-20 yrs)	Disturbance / Erosion	Slight-*	0
		Compaction	Minimal -*	Minimal -
		Productivity	Slight-*	Minimal +
		Sedimentation from haul roads	Minimal -*	0
LOWER WEST FORK OF ILLINOIS RIVER	Short (1-5 yrs)	Disturbance / Erosion	0	Slight -
		Added Compaction	0	Minimal -
		Productivity	0	Minimal -
		Sedimentation from main skid/haul roads	0	Minimal-
	Long (5-20 yrs)	Disturbance / Erosion	Slight-*	Minimal -
		Compaction	Minimal-*	Minimal -
		Productivity	Slight-*	Minimal +
		Sedimentation from main skid/haul roads	Minimal-*	0

KERBY	Short (1-5 yrs)	Disturbance / Erosion	0	Slight -
		Added Compaction	0	Minimal -
		Productivity	0	Minimal -
		Sedimentation from haul/skid roads	0	slight -
	Long (5-20 yrs)	Disturbance / Erosion	Slight-*	Minimal-
		Compaction	Minimal-*	Minimal -
		Productivity	Slight-*	Slight+*
		Sedimentation from haul roads	Minimal-*	Minimal-

Footnote: Effects ratings - (-) = negative effect; (+) = positive effect; (0) = neutral effect
Minimal = very little, limited to few sites; Slight = little distributed over most affected area; Moderate = mid level
*Assumes high fire hazard and risk for no action alt.

The proposed decommissioning of road 3.1 would reduce stream/road crossing by three and eliminate 0.4 mile of road that is adjacent to a stream. There would be a consequent reduction in long term sedimentation.

As noted in the Table above, the project could result in a slight sedimentation increase in the short term which would decline to a minimal level in the long term. This is due to sedimentation from the roads and stream crossing, particularly at the crossings of the Class 4 streams. Continued use of these roads in the future would preclude this long term decline and would keep sedimentation levels at the slightly elevated levels.

Mitigation Measure #1: On natural surfaced roads spot rock all Class 4 stream crossings. This would result in a reduction of the levels of sediment production both during operations and in the long term.

c. Cumulative Effects

1. Alternative 1: No Action

There would be no additional direct cumulative effects. As noted in the fuel / fire section, however, the current vegetation and fuels trend are increasing the fire hazard. A hot stand-replacing fire as described would create unvegetated areas and then high levels of early seral stage vegetation. There would be a concurrent increased exposure of the soil surface to erosional forces and there would be changes in the stream flow pattern particularly in the short term. Fire suppression activities could result in additional roads and some additional soil compaction. This would increase the existing levels of sediment into the streams.

2. Alternatives 2 and 3

Added cumulative hydrologic effects at the 6th and 5th field levels due to this project are negligible. There is no net increase in road density, minimal additions of compaction, no increases of early seral stage vegetation, no new open areas in the Transient Snow Zone, and no additional solar exposure to stream surfaces. These parameters are indicators of cumulative effects.

2. Resource: Forest Vegetation

a. Affected Environment

Fire exclusion and past logging in the project area have resulted in an increase in shade tolerant tanoak and Douglas-fir. Large fire tolerant pines, oaks and madrones are either leaving the system or subject to overly dense crowding from the above two species. Historically, light intensity fires created and maintained more open forests with fewer but larger trees. Currently, stand conditions are characterized by high densities of small diameter conifers and hardwoods. These dense conditions cause moderate to high levels of suppression mortality, loss of tree vigor, and make areas more prone to stand replacement fires.

b. Environmental Effects

1) Alternative 1: No Action

The current trend in vegetative changes noted above would continue.

2) Alternative 2

The predominately second growth stands in the project area would continue to with their development of multi-canopy, multi-species, and multi-age class conditions although at an accelerated rate. Although stands have high stocking levels, many trees and canopy layers still have the capacity to expand in height and width.

Relative stand densities would be reduced by thinning from high current levels (>0.7 to 1.0) to more normal levels (0.35 to 0.45). Thinning will decrease the length of time necessary to grow from current size classes (predominately early/mid seral) to a wider range of size classes. Thinning will accelerate these stands to potentially provide mature conditions into the future and make them more resistant to stand replacement fire.

Under the proposed action, species composition will more closely resemble that found prior to fire exclusion and logging. The trend of higher Douglas-fir and tanoak densities will be arrested to a landscape more dominated by fewer but larger sized pine, oak and Douglas-fir.

3. Resource: Wildlife and Wildlife habitats

a. Affected Environment

1) Habitats

The proposed project area is located in the Kerby, West Fork Illinois and East Fork Illinois Watersheds. The majority of the project area is located in or near the valley floor and includes Douglas-fir-Black Oak, Douglas-fir-Oregon White Oak, Douglas-fir-Tanoak sub-series as well as Douglas-fir riparian type series (Jimerson, *et. al*. 1996). Land ownership (private and federal) and land use patterns (rural residential, agriculture, commercial forest land) intermix with the natural diversity of the valley caused by serpentine soils and flood plains to form a landscape of diverse vegetation patches.

Section 5, T40S, R8W provides Douglas-fir late-successional forest wildlife habitat. This section is also adjacent to the West Fork Illinois River and provides high quality refugia and dispersal habitat for Douglas-fir late-successional associated species. This patch of habitat is of sufficient size and quality to provide suitable habitats for populations of species with small home ranges such as the California red-backed vole (*Clethrionomys californicus*) and red tree vole (*Arborimus longicaudus*). Late-successional forest habitats along a major river corridor can provide resting/foraging habitats for long distance migratory birds, and provide a vital dispersal connection across the valley floor for secretive species such as the American marten (*Martes americana)* or bobcat (*Lynx rufuos*).

The stands in Section 3, T40S, R8W and Section 33, T39S, R8W have not been harvested in the past 20 years. They currently have structural components important for wildlife species. These key wildlife structures include large diameter trees (>20"DBH), down wood, large hardwoods, dense unthinned areas intermixed with thinned areas.

Sections 9 and 23, T40S, R08W are dense, mostly Douglas-fir, stands with little overstory or tree species diversity and high canopy closure (>60%).

Section 3, T39S, R08W has a high diversity of wildlife habitat. It is bisected by numerous intermittent streams. This section contains Douglas-fir-Black Oak and Douglas-fir-Oregon White Oak habitats. The vegetation along some of these intermittent streams provides higher canopy closure and vertical structural diversity as well as a greater diversity and density of shrub and forb species than adjacent up slope habitats. This diversity of habitat provides for a greater diversity of small mammal and bird species and important forage, hiding and summer thermal cover for black-tailed deer. Most of the large dominant legacy sugar pine has been removed by past harvest. Many of the snags have been felled to minimize fire hazard. In areas of shallow soils and drier aspects Douglas-fir is encroaching and dominating previously open Oregon White Oak woodlands. This encroachment generally degrades Oregon white oak wildlife habitats as well as increasing fuel loadings and the risk of loss to stand replacing fires.

Within the Kerby, West Fork Illinois and East Fork Illinois watersheds elements such as species, numbers and decay stages of snags and down logs are below the levels of unmanaged stands due to past harvesting. Species associated with these habitats (cavity nesting and roosting bats, small mammals and birds) are thus lower than would be expected in native stands.

2) Species

The lands within the project area provide habitats for a number of special status species including *Red tree vole (*Phenacomys longicaudus*), Great Grey Owl (*Strix nebulosa*) *Red-Tailed hawk (*Buteo jamaicensis*), Osprey (*Pandion haleatus*), Goshawks (*Accipiter gentilis*), and other raptors as well as all five species of bats identified in the Northwest Forest Plan Record of Decision (ROD) (* these species have been detected).

(a) Red Tree Vole

The red tree vole (RTV) is an arboreal rodent with very low dispersal and reproductive capabilities. The broad management objective for this species is to retain sufficient habitats to maintain its potential for reproduction, dispersal and genetic exchange. Habitat analysis conducted by the Siskiyou National

Forest (the major federal land manager in the watershed) has determined that the West Fork and East Fork Illinois Watersheds have more than 40% (5th field watershed scale) of the federal forest land in suitable RTV habitat. Specific surveys are thus not required by the current interagency management protocols / guidelines. Much of this RTV habitat is, however, located in the uplands on the Siskiyou National Forest (See Table E-2). The valley floor area of the West Fork Illinois watershed currently provides small (<100 acre) patches of suitable red tree vole habitat in a matrix of agriculture, homes and previously harvested forest stands. The existing red tree vole habitat in the valley floor is thus limited in quantity. Much of what does exist is of marginal quality. Habitat connectivity is also poor and this habitat fragmentation limits dispersal of individuals which in turn could lead to loss of genetic variation within local populations. Loss of genetic diversity can limit a population's ability to adapt to stressful situations or changes in the physical environment and thus can lead to the loss of that particular population. Those valley bottom stands that currently provide RTV habitat are thus important by virtue of their position on the landscape.

Table E-2: Acres of Red Tree Vole Habitat on Federal Lands by Watershed

Watershed	BLM	USFS	Federal
Kerby*	568	0	568
E Fork Illinois	1,387	12,221	13,608
W Fork Illinois	602	14,479	15,081

*The Kerby watershed, as analyzed by the BLM, is part of the larger Illinois-Josephine 5th field watershed.

The extent of RTV occupancy of this habitat where it occurs on BLM is not well established. At this time only approximately 16% of the habitat has been surveyed. Of that an estimated 55% of the acres are occupied by RTVs.

Table E-3 indicates the acreage of potential RTV habitat in the *"3+3"* project area.

Table E- 3: Acres of potential RTV habitat in the project area

Species	Acres of Quality Habitat (McKelvey class 1 & 2)	Acres of Marginal Habitat (Other than McKelvey 1`& 2 and >10" average stand diameter w/ 60% canopy closure)
Red Tree Vole	153	306

Red tree vole nests have been located in the project area in Sections 3 and 5, T40S, R8W and Section 33, T39S, R8W. Some of these have been confirmed as RTV nests by feeding residues on the ground beneath them. Others have not been so confirmed. In some instances in Section 5, nests that visually meet structural characteristics were subsequently climbed and determined to be nests for other animals.

(b) Great Gray Owl

The Great Gray Owl is a survey and manage species. Table E-4 summarizes the extent of Great Gray Owl habitat in the project area.

Table E-4: Acres of great Gray owl habitat in the project area.		
Species	Acres of Quality Habitat (McKelvey class 1 &2 w/in 1/4 mile of foraging habitat)	Acres of Marginal Habitat (McKelvey class 1 &2 greater than 1/4 mile of foraging habitat)
Great Grey Owl	108	183

Potential habitat for the Great Gray Owl is located in sections 3 and 33 of T39S R8W and sections 3, 5, 9 and 23 of T40S R8W of the project area. This habitat has not been fully surveyed nor is it currently a requirement.

b. Environmental Consequences

1) Alternative 1: No Action

a) Habitat

Oregon White Oak habitats located in Section 3, T39S, R8W will continue to be invaded by Douglas-fir thereby displacing Oregon white oak. Loss of the open areas typical of these habitats would result in decline of western blue birds which forage in the open spaces. Diminished mast production would adversely impact species such as acorn woodpeckers, wild turkeys, black bear and black-tailed deer. Loss of the Oregon white oak would also result in a decline in the numbers of cavities available and used by species such as squirrels and western screech owls.

Black oak in the riparian reserves in Section 5 will continue to be shaded out by the increasing canopy closure of the Douglas-fir. In time, black oak will be virtually lost from these stands with a consequent loss of nesting sites and acorn (mast) production and a loss of horizontal and vertical structure important roosting.

Late-successional coniferous forest wildlife habitat / stands in the project area would continue to provide some of the stand structures (canopy closure, dense small patches of young trees, large hardwoods, remnant old-growth trees and/or large down wood) that is important to late-successional forest associated species such as red tree voles and California red-backed voles. These stands are important for the dispersal of late-successional forest associated species and as refugia for these same species within the highly fragmented landscape of the Illinois valley.

Riparian reserves located in Section 5 and 23, T40S R8W and Section 3, T 39S R8W would continue to provide high quality refugia/dispersal habitat in section 5 and landscape level habitat diversity in Section 3. Riparian reserves in these two sections would continue to provide habitat refugia, connectivity and dispersal for terrestrial wildlife species that require canopy closure (40% or greater) and vegetation structural and species diversity.

b) Species

There would be a long term decline of species associated with Oregon White Oak habitats as these decline in extent and quality. Refugia habitats suitable for red tree voles and other late-successional forest species with small home ranges would continue in the long term and provide a source population

for expansion into surrounding habitats as the adjacent stands develop, mature and increase in canopy closure. Suitable nesting habitat for great gray owls would continue.

2) Alternative 2

a) Short term (5-10 years)

(1) Habitat

Proposed vegetation treatments would rejuvenate and enhance an estimated 35-45 acres of Oregon White Oak habitat. These habitats have been identified as habitats in decline by the Oregon - Washington Partner's in Flight working group. As noted, this white oak habitat is important to many species of wildlife including black-tailed deer, black bear, wild turkeys, neotropical migratory birds, acorn woodpecker and western screech owls.

The proposed silvicultural treatments in the forest stands that currently provide late-successional wildlife habitats or stands that currently have some of the stand structures (canopy closure, remnant old-growth trees and/or large down wood) important to late-successional associated species will diminish the quality of these habitats. Structural features such as canopy closure and canopy layering provided by the current "uneven multiple canopy" conditions would, in part, be lost. Based on recent thinning in similar stands (Noreast) canopy closure in these stands could be reduced to 35 - 45%. Full canopy closure recovery would be expected to take 20-25 years. As a consequence these stands may not provide suitable dispersal habitat for late-successional forest associated species or those small home range species currently occupying these stands for this period of time.

Coarse woody material recruitment potential would be reduced due to the thinnings. This would adversely effect those species reliant upon this material (*e.g.*, clouded salamanders).

Proposed silviculture treatments within the riparian reserves in Section 5 (Unit 5-2 along the Illinois river) would maintain areas of mature habitat and thin pole areas currently with an even age structure. The resultant canopy closure would vary throughout the stand perpetuating the heterogenous condition of the stand. Post project it is anticipated that the area would continue to provide refugia and dispersal habitat for late-successional species.

In Unit 5-1 the riparian reserve located along the unnamed perennial stream is not as structurally diverse as the riparian reserve in Unit 5-2. No thinning (PCT or commercial) would occur in Unit 5-2 within the topographically differentiated stream bottom: 60-80' on south side of the stream and average of 50' on the other. The commercial thinning proposed in the riparian reserve of 5-1 but outside the no-treatment area would reduce canopy closure from approximately 85% to 50 - 60%. Although this area is not late-successional habitat, the current high level of canopy closure and the nature of the stand allows for refugia and dispersal of species associated with late-successional forest. The proposed prescription would reduce the overall effectiveness of Unit 5-1 as refugia or dispersal habitat for late-successional species by creating more open canopy conditions and potential increase in predation, but it would not be eliminated.

Access and skid trails created as a part of commercial thinning in the riparian reserves can result in increased human activity in the area even after logging activities are concluded. Increases in human

disturbances will diminish the effectiveness of riparian reserve habitat (refugia and dispersal functions) due to disturbance and consequent stress of the wildlife which can contribute to reproduction declines and higher mortality.

Snag habitats - While project design features strive to protect and retain snags, some loss may occur due to felling damage and woodsworker safety concerns. This impact has both short and long term implications to snag habitat dependant species. Additionally, there may be a long term decline of snag habitats as a result of the proposed prescription where it directs the selection of the most vigorous trees with the healthiest crowns for retention. This will affect the recruitment of potential snags by removing trees with low vigor and closer to a point of mortality. Loss of snags and snag habitat will have a negative affect on snag dependent species such as some birds and bats.

(2) Species

This project will not affect Northern Spotted Owls (*Strix occidentalis caurina*) or Del Norte Salamanders (*Plethedon elongatus*). There is no suitable salamander habitat in the project area. There are no known spotted owls in the project area.

(a) Red Tree Vole

As previously noted, Red Tree Vole surveys and protection are not required by the Interagency Interim Guidance for Red Tree Voles (Nov. 4, 1996) in those watersheds where more than 40% of the Federal land in a fifth field watershed has certain canopy closure and size characteristics. The “3+3" project is located in watersheds where this criteria is exceeded. However, in that the lower valley bottoms is characterized by a highly fragmented RTV habitat the broader overall management goal for this species (*i.e.*, to maintain dispersal capabilities throughout the 5th field watershed thus to facilitate the reproduction potential, dispersal and genetic exchange) may not be met.

Alternative 2's thinning will alter RTV habitat conditions on approximately 300 acres of current RTV habitat. Based on a post harvest review of the thinning done under the nearby Noreast timber sale (harvested in 1996), a substantial decline of active nest sites may occur throughout the existing habitat. In the Noreast case, four red tree vole nests that were active prior to the sale were determined to have been inactive for approximately 2 years (Pers Comm. Brian Biswell-PNW) after stand thinning. Their inactivity could be attributable to the thinning.

(b) Great Grey Owl

Historic data indicates that Great Gray Owls have been sighted in the Illinois Valley. The current interagency Great Gray Owl survey protocol does not require surveys below 3,000 ft. Protocol surveys have, however, been conducted on a limited basis in the project area in stands determined to be suitable for nesting and with appropriate foraging habitat located within 1/4 mile (agricultural land, old clearcuts, and natural meadows). These surveys did not locate Great Grey Owls but not all potential nest stands have been surveyed. It is estimated that approximately 290 acres of potential nesting habitat would be altered to non-nesting habitat condition due to a reduction in canopy density. This could result in a local decrease in the great grey owl population.

Proposed Mitigation Measure #2: Implement protocol surveys of all suitable Great Grey Owl nesting

habitat throughout the project area prior to timber harvest. If stands are determined to be nesting sites for Great Grey Owls defer from harvest.

b) Long Term (20+ years)

(1) Habitat

Treatment of Oregon White Oak stands at this time and the reintroduction of fire would help retain the habitat effectiveness of these stands for associated species.

Long term effects to late-successional habitat located in section 5 cannot be determined at this time due to the isolated nature of this patch. It is unknown how readily it would be recolonized by low mobility species in the long term.

The long term effects to the riparian reserve located in section 5 will vary due to the heterogenous nature of the stand. Overall the stand will be moving towards late-successional/mature conditions. It is anticipated that thinning the portion of the stand that is currently dominated by even age/poles will be provide for larger diameter trees faster than would occur without thinning. The extent to which this treatment will create the structural diversity (snag and down logs) and canopy closure sufficient for late-successional species in the long term is not well understood. The mature portion of the stand will be maintained in late-successional condition and provide for a potential source population of various late-successional species (*e.g.*, Red tree voles, molluscs etc.). The riparian reserve treatments proposed in Section 3, T39S, R8W are expected to increase the growth rate of residual trees to provide for larger diameter trees faster than would occur without thinning. Similarly to section 5, the extent to which this treatment will create the structural diversity (snag and down logs) and canopy closure along the intermittent streams in section 3, sufficient for late-successional species in the long term is not known. The proposed treatments would also ensure the continued presence of pine and oak habitat in the stands. The long term effect on all species diversity or structural diversity (snags, down wood, canopy closure) is unknown.

(2) Species

(a) Red Tree Vole (RTV)

As noted, this project will alter 298 acres of suitable RTV habitat. It's estimated that it would take 20-25 years for canopy closure to return to current levels. The ability of a species to tolerate the habitat matrix surrounding the remnants of suitable habitat they occupy has been identified as the most important ecological predictor of vulnerability (Bierregaard et al, 1992, Franklin, 1993). Current knowledge of the life history requirements of RTV indicates that they require canopy closure sufficient to modify the dryness of southern Oregon summers and as protection from predators. In addition RTV tend to be a patchily distributed species with a maximum dispersal distance of 1/4 mile. These factors indicate that the thinning of currently occupied red tree vole habitats will contribute to a downward trend in RTV habitat over the long term. Without more data from the surrounding modified landscape it cannot be determined if the red tree vole populations that have been located are important to minimizing isolation and the decline of RTVs in the Illinois Valley.

Proposed Mitigation Measure #3: Determine the activity/occupancy of red tree vole nests located in

Section 33, T39S, R08W and sections 3 and 5 of T40S, R08W. If these nests are determined to be active defer these stands from harvest at this time.

(b) Great Gray Owl

It is difficult to determine the long term affects to this species. Little is known about their life history and habitat requirements in this southwestern part of their range. In the long term canopy closure of the thinned stands would return and be sufficient as nesting habitat. Great Gray Owls utilize the nests constructed by other species such as the western gray squirrel or Coopers hawk. As long as these species persist in stands, there should be nesting platforms suitable for the owl. Since it is unknown how this species colonizes suitable nesting habitats it cannot be determined what the long term effects will be.

c) Cumulative Effects

(1) Habitat

Treatment of Oregon White Oak stands at this time and the reintroduction of fire would help retain and expand this habitat type within the Kerby watershed. This alternative would have beneficial effects for species associated with this vegetation type within the watershed.

The actual acres of late-successional forest and stands that currently provide some of the stand structures (canopy closure, remnant old-growth trees, large hardwoods and/or large down wood) being proposed for harvest in alternative 2 of the 3 + 3 timber sale is relatively small. However, these stands provide vital refugia and dispersal habitat across the highly fragmented Illinois Valley. This alternative would further fragment the already fragmented late-successional habitat on the valley floor. Fragmented habitats can reduce genetic flows within and to adjacent watersheds and LSR's especially for species like red tree voles and California red backed voles.

Effects to the riparian reserves proposed for treatment in Section 3 of T39S, R8W would be to reduce the ability of these reserves to provide dispersal/migration habitats until such time as canopy closure returns to 60% or above and structural diversity of snags and down logs are attained. In both the Kerby and West Fork Illinois watersheds BLM manages a small portion of the low elevation riparian habitats across the valley floor. Silvicultural treatments that do not retain 60+% canopy closure and/or that construct new skid roads within reserves would diminish the habitat effectiveness of these riparian reserves as conduits for the east/west movement of species across the Illinois valley.

3) Alternative 3

a) Short Term (< 10 years)

(1) Red Tree Vole

This alternative would provide approximately 11 acres of RTV buffers in the West Fork Illinois watershed not provided under Alternative 2. It is likely that the buffering of nest sites would retain these populations for the short term (10 years or less).

b) Long Term (10+ years)

(1) Red Tree Vole

Whether or not these buffers will maintain these populations for the long term is unknown. Ongoing research has indicated that vegetative structure that protects microclimate conditions such as moisture may be important to red tree voles. One acre and two acre buffers may not protect these sites from changes in the microclimate or from increased risks of predation.

Proposed Mitigation Measure #4: Determine the activity/occupancy of red tree vole nests located in Section 33, T39S, R08W and sections 3 and 5 of T40S, R08W. If these nests are determined to be active defer these stands from harvest at this time. (Note: This is the same as mitigating measure #3 as proposed for Alternative 2.)

4. Resource: Botany

a. Affected Environment

The area covered by this project is prime habitat for several endemic Illinois Valley/Rogue Valley species. *Lomatium cookii* occurs in one location within the sale in T39S,R8W,Section 3, Unit 3-8. *Limnanthes gracilis var. gracilis* occurs in two locations in the same section, one in Unit 3-8 and one in Unit 3-4. The species, *Erythronium howellii*, occurs in four locations within the sale. Two sites are in T40S,R8W,Section 9, both in Unit 9-1 and two sites are in T39S,R8W,Section 33, both in Unit 33-4.

Lomatium cookii is a Federal Candidate under the Endangered Species Act. This species will be officially proposed as Endangered sometime in 1998. The species is also a State Endangered species. The species occurs in wet grassy openings and meadows on the valley floor in both the Illinois Valley and in the Agate Desert area of the Rogue Valley. The species is threatened by development, off road vehicle damage and agriculture which has diminished the amount of intact habitat left for the species to exist. The BLM lands in the Illinois Valley offer some of the last protected habitat for this species.

Limnanthes gracilis var. gracilis is a Bureau Sensitive species also found in wet openings and meadows on the valley floor in both the Illinois and Rogue Valleys. It can coexist with *Lomatium cookii*. The same threats of development and agricultural practices have diminished its habitat as well, but this species is found in many more locations than *Lomatium cookii*.

Erythronium howellii is a narrowly endemic species limited to serpentine influenced forests along the edges of serpentine openings from the south end of the Illinois Valley into northern portions of Del Norte, Humboldt and Siskiyou counties. It is a Bureau Sensitive species which gains the same protective measures as a Federal Candidate.

b. Environmental Effects

1) Alternative 1: No Action

The effects of the No Action alternative on special status species would be both beneficial and adverse.

The beneficial effects arise from the continuation of undisturbed habitat of the special status species present.

The adverse effects arise from the increased risk of wildfire in areas adjacent to plant populations. Rural interface areas would not be cleared, increasing the risk of fire ignition in these areas. Without these hazard fuel reduction projects, the risk of high intensity fire moving into plant populations increases and could threaten special status species, especially *Erythronium howellii.*

2) Alternatives 2 & 3

The *Limnanthes gracilis var. gracilis* populations within "3+3" are all within riparian buffers. Riparian treatments will make it difficult to control trampling of these populations. For *Lomatium cookii*, its site is an opening surrounded by manzanita. The manzanita will be sold as a special forest product. The population has been buffered to keep skidding or other timber related activities from taking place, but this may be difficult to ensure.

Although the direct effects will be mitigated, indirect effects on both these species could occur if other natural openings (*i.e.*, potential habitat) are used for skidding, landings or transport. Maintaining these openings with little impact is crucial to *Lomatium cookii*'s existence since its habitat has been so diminished on private lands. Use of roads in the area of this species should be limited to only special forest products contractors.

Proposed Mitigation Measure #5: Avoid using natural openings for skidding, piling or other timber related activities. Install gate on road 39-8-3.2 before special forest products activities commence, allowing access by key only to these contractors.

For the *Erythronium howellii* populations, little is known regarding the effects of changes in canopy cover on these species. Buffers should protect against such direct effects as uprooting of plants. Indirect effects are unknown. The effects of burning on this species as well as *Lomatium cookii* and *Limnanthes gracilis var. gracilis* are also unknown, therefore it would be best to protect all buffers on this sale from fire.

***Proposed Mitigation Measure #6*:** Avoid slashing and burning within all special status plant buffers.

c. Cumulative Effects

The habitat for the special status species found in this project area (*i.e.*, natural grassland openings and serpentine influenced forest edges) is very limited in the Illinois Valley. Any ground disturbing activities in these habitats could affect the capability for these species to maintain or increase their numbers. The reasonable foreseeable future actions that will take place in the Matrix and on county and private land will include continued timber harvest, understory treatments, more off road vehicle damage and clearing of forest land and grasslands for development. The effect could be the threatened existence of the species, *Lomatium cookii*, in the Illinois Valley. The impending listing as Endangered under the Federal Endangered Species Act is in answer to this threat. A decrease in population numbers from future ground disturbing activities on non-federal lands could lead to a decrease in the ability of the other two species to exist after a catastrophic event such as wildfire.

5. Resource: 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 be it human or lightning.

A fuel hazard and wildfire occurrence risk rating analysis was completed for the “3+3" proposed project area. The project area includes a total of 1,736 acres of BLM administered lands within the six sections considered within this project proposal.

Wildfire occurrence ***risk*** for all lands in the project area is rated as high. The current high level of risk is primarily due to human use and presence adjacent to these lands within the Rural Interface Area. 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. Human use in the future would be expected to increase but the influence in terms of affecting risk is difficult to determine. Therefore, for the purpose of this analysis, risk is not affected by future human development nor any activity in this project proposal and is thus 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. This fire regime was one of 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 high severity fire occurrence. Dense, overstocked stands are a contributing factor to stand replacement fire occurrence due to the closed canopy and ladder fuel presence.

Table E-9 shows the current fuel hazard condition rating by acres and percent for all proposed project acres. It projects the change in hazard over time, short term (5-10 years), and long term (10-20 years) for the No Action Alternative 1, and Alternatives 2 and 3.

Table E-5: Hazard Rating by Acres and Percent for All BLM Administered Lands in 3+3 Project Area			
CONDITION	HIGH HAZARD	MODERATE HAZARD	LOW HAZARD
CURRENT CONDITION	38 % 658 acres	34 % 592 acres	28% 486 acres
ALTERNATIVE 1 NO ACTION 5-10 YEARS	45 % 774 acres	32 % 564 acres	23 % 398 acres
10-20 YEARS	50 % 859 acres	31 % 539 acres	19 % 338 acres
ALTERNATIVES 2 and 3 5-10 YEARS	7 % 128 acres	20 % 345 acres	73 % 1,263 acres
10-20 YEARS	20 % 340 acres	33 % 575 acres	47 % 821 acres

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 time of field data collection (summer of 1997).

b. Environmental Effects

The following assumptions where 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. Hand piling and burning reduced the hazard rating by one factor (e.g., HIGH to MODERATE, MODERATE to LOW). Density reduction treatments in both the overstory and understory with underburning or hand piling and burning reduce the hazard rating 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 time frame 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 time frame, 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.

1) Alternative 1: (No Action)

The No Action Alternative would continue the current trend of increasing the fuel hazard over time. This alternative does nothing to reverse the trend of increasing fuel hazard. With the area in rural interface conditions a continued absence of natural, low-intensity, frequent fire occurrence will continue. Dead and down fuels and live fuels will increase over time. The fuels buildup creates conditions that lead to high-intensity, stand replacement fire. The current condition has 38% of the area in a high hazard condition. This increases to 45% within the short time period. The high hazard is a result of the dense stocking, multi-canopy nature of the portions of the vegetation in the project area. The trend of increasing high hazard fuel conditions will continue if no hazard reduction treatment occurs. Half of the area will be in this conditions within the 10 to 20 year long-term time frame.

2) Alternatives 2 and 3

Alternatives 2 and 3 have the identical hazard reduction treatments for each of there proposed actions. These include treatments on a total of 843 acres. Commercial thinning, understory treatment (PCT), and prescribed fire use or mechanical slash buster within approximately 811 acres; and understory prescribed fire use within 32 acres. Actual use of prescribed fire is anticipated to occur on no more then 60- 70% of the 843 treatment acres.

These treatments reduce and remove fuels. The hazard reduction treatments have a positive benefit and shift those acres into lower hazard conditions. Alternatives 2 and 3 would have a short term (5-10 years) affect of reducing the amount of high and moderate hazard from the current combined 72% to a combined 27%. The amount of lands in the low hazard goes from the current 28% level to 73% for short term. The fuel hazard would remain below the current level and No Action Alternative level throughout the 20 year analysis period.

The effects of hazard reduction treatment in the Alternatives 2 and 3 are 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 and less resistance to suppression actions 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. Reducing the size and amount of high intensity burn area from a wildfire would have a short term beneficial effect in maintaining the forest and visual resources within the RIA, as well as reducing effects on stream and water quality.

c. Cumulative Effects

1) Alternative 1

The no action alternative allows the continuation of hazardous fuels to build up and increases the potential for catastrophic fire occurrence within rural population areas. This has the potential to impact both the forest ecosystems and the adjacent private properties. Catastrophic fire events such as those that have occurred in other areas of the southwestern Oregon within the past decade will increase in

probability for the project area. Impacts of such an event on visual, wildlife, forest conditions and the human population would be extreme.

2) Alternatives 2 and 3

The proposed harvest and non harvest stocking density reduction and fuel hazard reduction treatments in these Alternatives would substantially reduce the fuel hazard within the project area. These can have the effect of significantly reducing the potential for adverse wildfire effects that would result when a wildfire occurs. Fire would burn with less intensity causing lower amounts of vegetation mortality. Fire burning with less intensity reduces the difficulty of control by fire suppression forces. Future maintenance treatments will be necessary to maintain the low fuel hazard conditions.

6. Resource: Fisheries

a. Affected Environment

The West Fork Illinois River, East Fork Illinois River, and Logan Cut are the major streams within the proposed project area. Chinook and coho salmon, steelhead, cutthroat trout, pacific lamprey, and sculpin are found throughout the project area in the West and East Forks of the Illinois River. Cutthroat trout, Steelhead, and coho salmon are found in Logan Cut throughout the project area. In addition, there is an unnamed tributary to W. Fork Illinois in the northeastern 1/4 of section 5 which contains sculpin. There are numerous non-fish bearing streams in the project area which enter Reeves Creek further downstream. Cutthroat trout, steelhead, and coho salmon are found in Reeves Creek.

The East Fork of the Illinois River was identified by the Governor's salmon recovery plan as a core habitat area of critical importance to the maintenance of coho salmon populations. The East Fork of the Illinois was identified as a high value steelhead stream in the Rogue Basin by the Governor's steelhead recovery plan. Habitat conditions are limited by large wood, water quality, and riparian quality. Currently there are an average of five pieces of wood per mile of stream. The ODFW desirable habitat benchmark is 300 pieces per mile. In the past four years, BLM stream temperature monitoring data has revealed summer maximum seven day highs as much as 73EF . The Oregon DEQ water quality standard is 64EF. Riparian canopy cover does not meet the ODFW benchmark of >75%. This may be due to the flood of 1964.

The West Fork of the Illinois River was identified by the Governor's steelhead recovery plan as a high value steelhead stream in the Rogue Basin. Habitat conditions are limited by water quality. The Oregon Department of Environmental Quality, based on a highest seven day maximum temperature average, has designated the West Fork Illinois as water quality-limited.

Logan Cut is a tributary to the West Fork Illinois.

b. Environmental consequences

Alternative 1: No Action

a) short term

The no action alternative would preclude road maintenance, decommissioning, and blockading. This would allow continued sediment delivery to unnamed tributaries of the W. Fork Illinois, East Fork Illinois River, and Logan Cut. The additional sediment in the spawning gravels would substantially reduce salmonid production and survival rates.

b) long term

As the seral stages continue to advance in the riparian reserve, the size and amount of wood added to the stream would increase in the long term (50-100+ years). This will result in increased pool frequency and depth, thereby providing rearing habitat. As roads begin to revegetate and become more stable, stream sediment would decrease. Salmonid survival rates would increase and salmonid populations would increase

c) cumulative effects

Relatively low levels of LWD and riparian quality are currently the limiting factors in E. Fork Illinois River. Salmonid production and survival rates would benefit from an increased amount and size of wood available to the stream and riparian area. The current sedimentation trend in the area would continue: sediment levels would increase and would have a negative cumulative effect on salmonid populations.

2. alternative 2&3, the proposed action

a) short term

Crossing of intermittent streams will take place in the dry season. This will add a negligible amount of sediment to the streams, and will consequently have negligible impact on survival or production of salmonids.

b) long term

The prescription calls for actions within the riparian reserves which will accelerate late successional or old growth conditions. This will lead to an increase in the size of LWD available for recruitment to the stream. The larger wood will have a better chance of anchoring in the larger streams. The proposed action calls for an additional five trees per acre to be left in the riparian reserve, and three trees will be left in the uplands. These trees will help meet CWD requirements. The leave trees which fall in the stream will be a direct benefit to salmonid populations. The in stream wood will help dissipate energy during high flow events, and provide a source of refugia for juvenile salmonids. Additionally, it will

provide resting areas for migrating adults. The leave trees which fall in the riparian reserve will provide habitat for terrestrial insects. During the summer months, the insects are a substantial forage base for salmonid populations. This additional food supply may slightly increase salmonid populations.

c) cumulative effects

Salmonid production, and survival in the West Fork Illinois River, East Fork Illinois River, and Logan Cut will benefit from a positive cumulative effect as a result of the increased amount of large wood available to the streams.

Chapter 4
Agencies and Persons Consulted

A. Public Involvement

All public input was considered by the planning and ID teams in developing the timber sale 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.

A scoping letter was sent to landowners within 1/4 mile of the proposed project area and others with an interest in this type of project on March 13, 1997. Over 500 letters were mailed. Approximately five letters and eight phone calls were received in response to the scoping letter.

At the request of several individuals, core planning team members met three times with adjacent landowners within the project area.

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 30 calendar days after the announcement of the EA availability appears in the Grants Pass Courier newspaper.

Appendix A
Issues Considered but Eliminated From Detailed Analysis

1. Some core planning team members met and discussed with members of the Rockydale Neighborhood Association a proposal for a designated recreation area in section 23. The Medford RMP has already designated some adjacent land as potential recreation area. Proposed thinnings are on designated Matrix lands and will be sensitive to current recreation use in area.

Appendix B

Potential Monitoring Identified During Project Planning

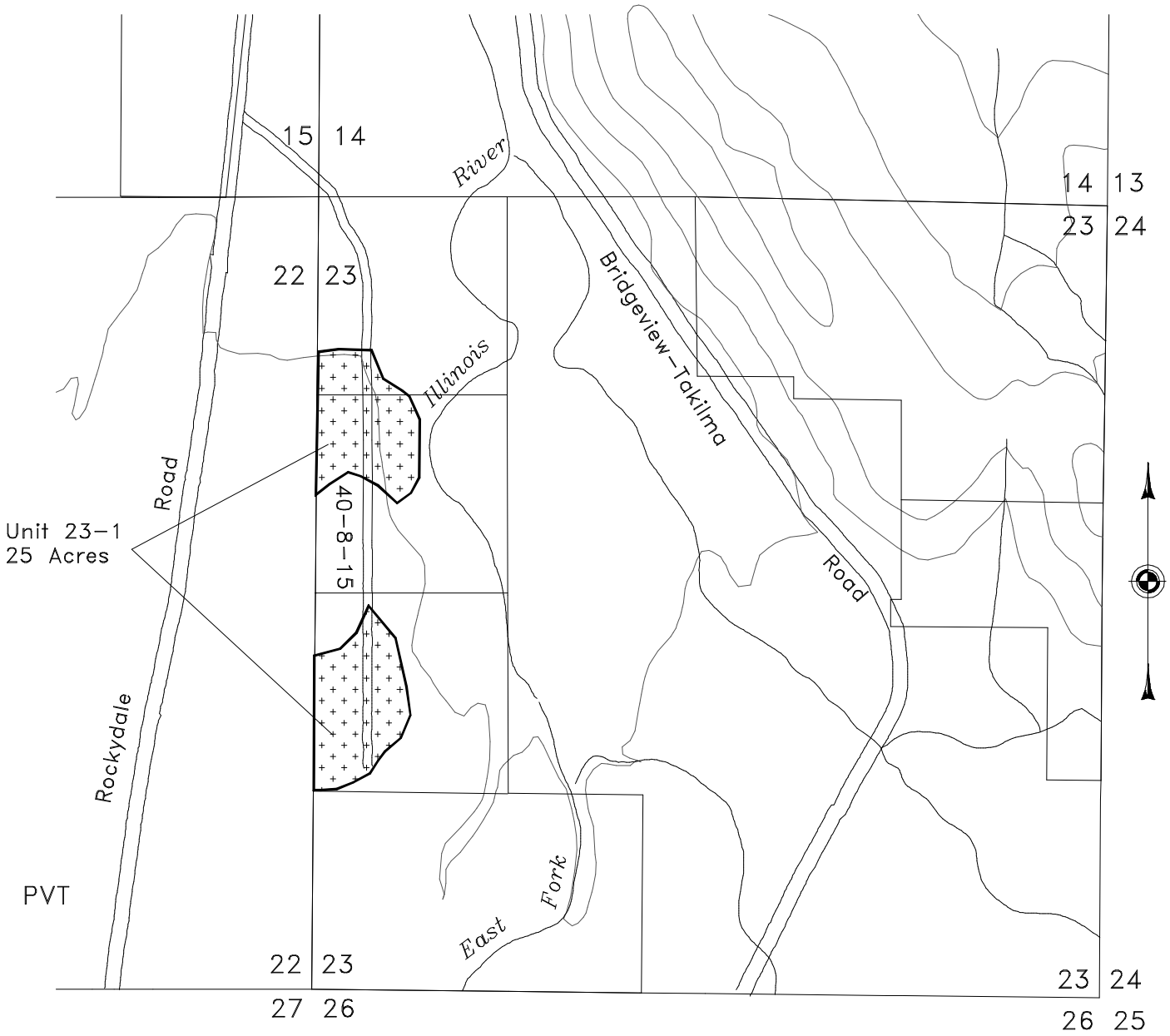
1. *Soil compaction* - Evaluate the post-harvest conditions to assess the areal extent of soil compaction within tractor harvest units. Are the target 6% and 10%, or less, levels met. If these levels are not met, additional skid trail ripping will be done as part of the road decommission in road steps.

2. *Red Tree Vole habitat effectiveness* - Complete red tree vole surveys on remaining suitable habitats on BLM lands within the E Fork and W Fork Illinois watersheds to help determine if these known sites are important for dispersal and as refugia for the species. Implement a monitoring plan that investigates the persistence of these red tree vole populations over time. This monitoring program would be to determine the short and long term effects of management activities on red tree vole populations *(Interim Guidance for Survey and Manage Component 2 Species: Red Tree Vole Date Nov. 4, 1996).*

Appendix C

MAP 2: Proposed Action

U.S.D.I. BLM Medford District
T.40S., R.8W., Sec. 23, Will. Mer.
3+3 Forest Management Project



CONTOUR INTERVAL 100'

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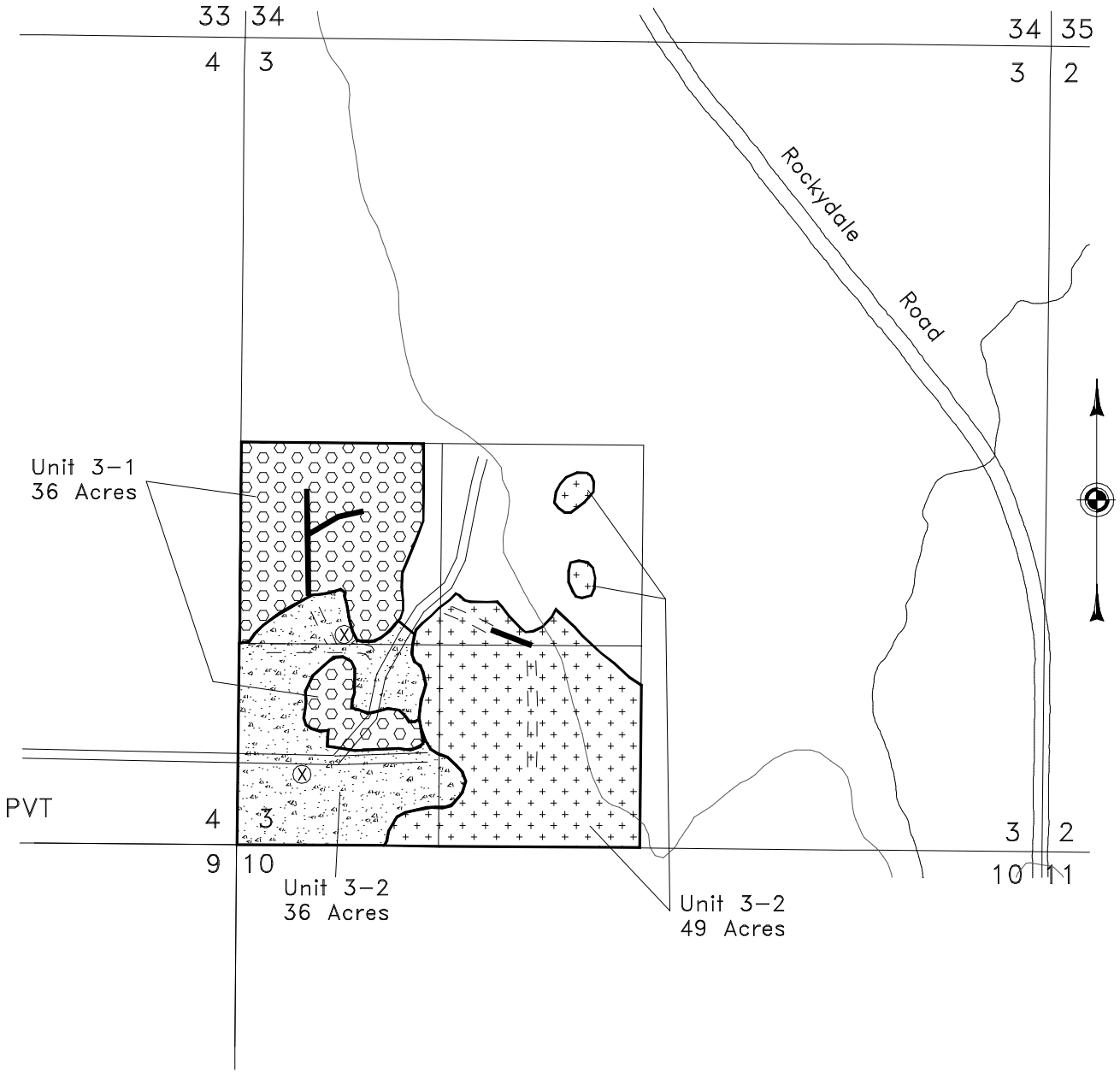
Feet

U.S.D.I. BLM Medford District
T.40S., R.8W., Sec. 3, Will. Mer.
3+3 Forest Management Project



CONTOUR INTERVAL 100'

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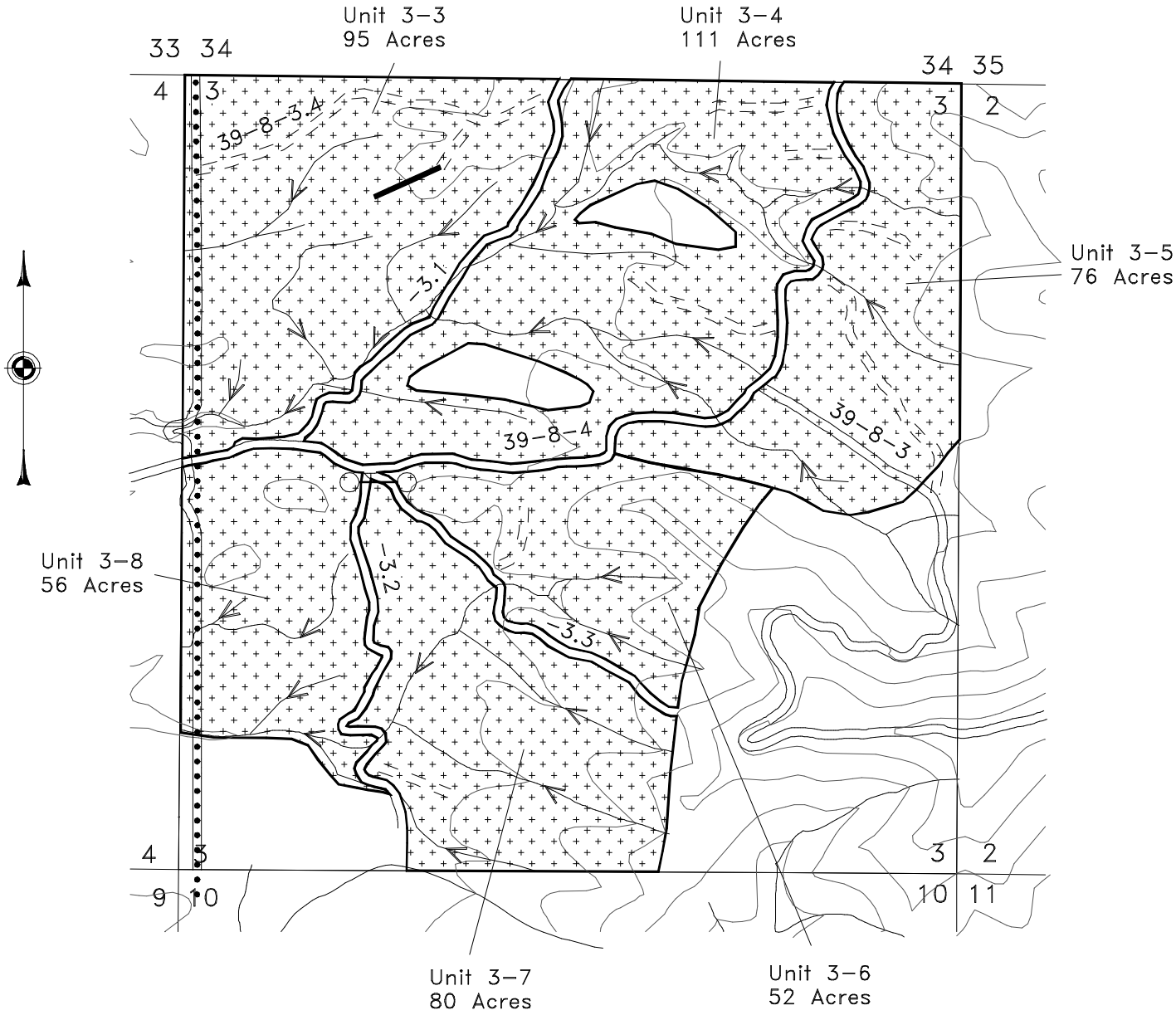
Feet



CONTOUR INTERVAL 100'

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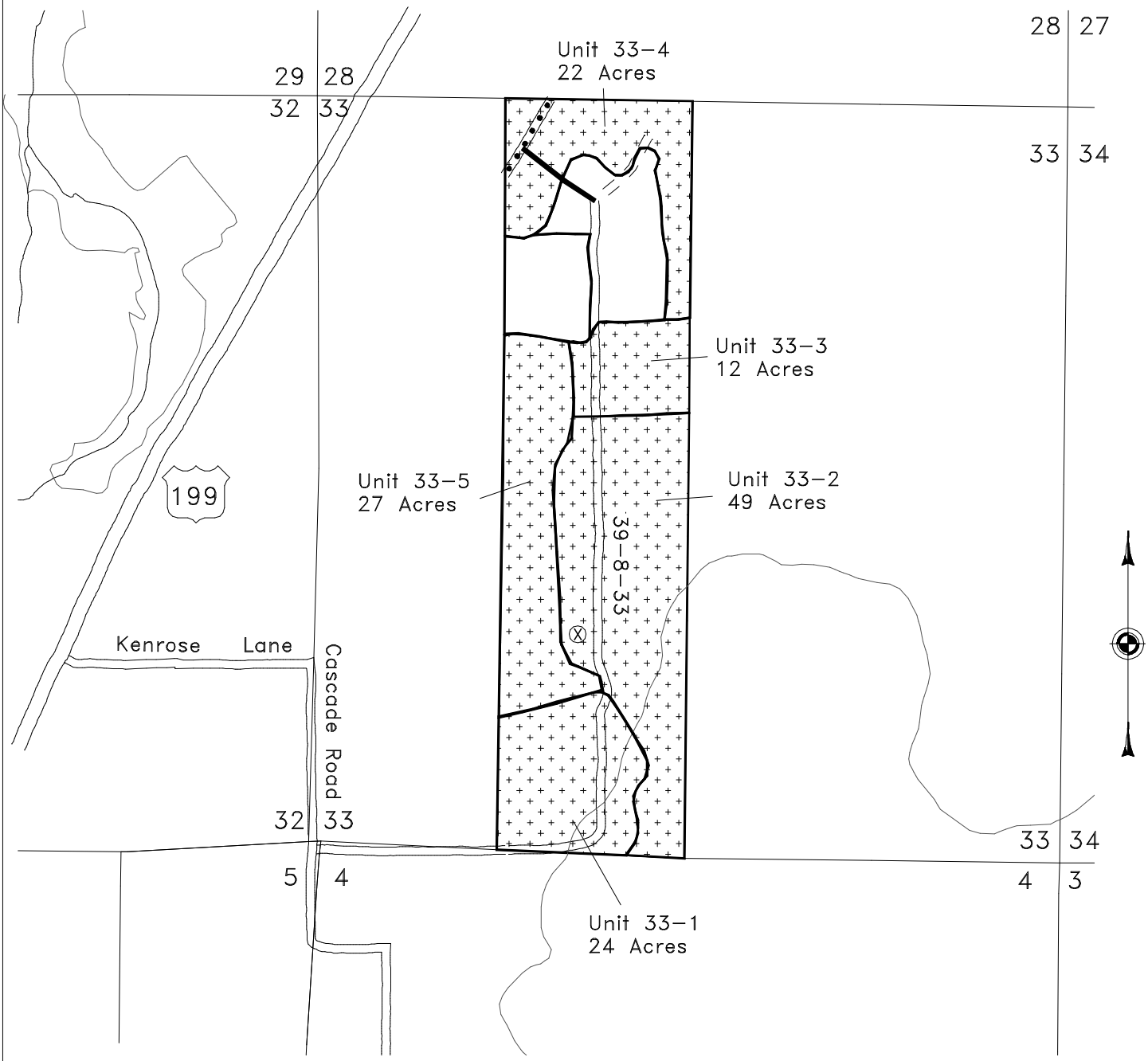
Feet

U.S.D.I. BLM Medford District
T.39S., R.8W., Sec. 33, Will. Mer.
3+3 Forest Management Project

Environmental Assessment
Map 2
Page 4 of 7



CONTOUR INTERVAL 100'

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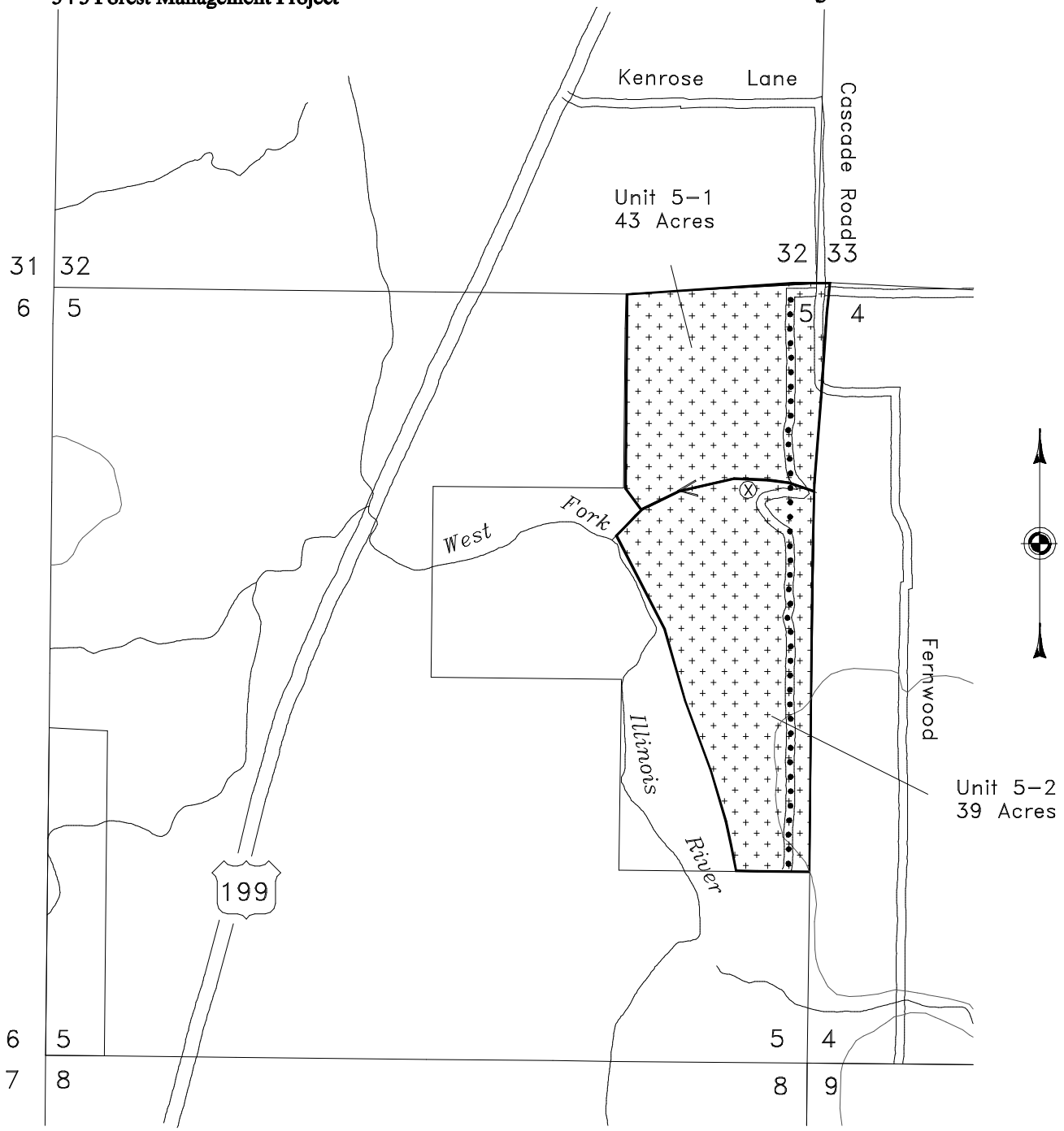
Feet

U.S.D.I. BLM Medford District
T.40S., R.8W., Sec. 5, Will. Mer.
3+3 Forest Management Project

Environmental Assessment
Map 2
Page 5 of 7



CONTOUR INTERVAL 100'

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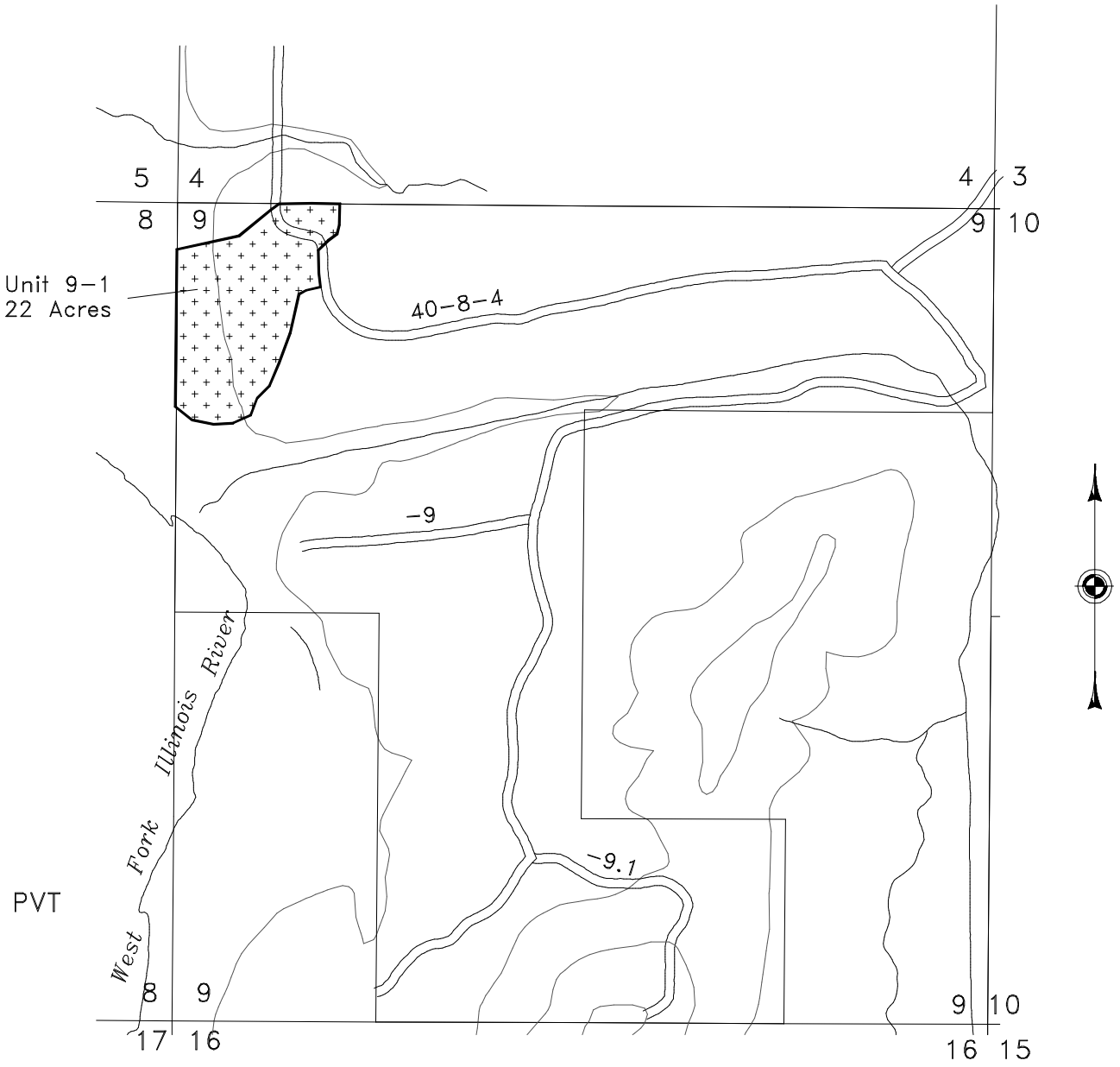
Feet



CONTOUR INTERVAL 100'

0 1000 2000
Feet

LEGEND

Power line road

Existing roads

Existing spur roads

New spur construction

Streams (Riparian reserves)

Treatment unit boundary

Red Tree Vole nests (Alternative 2)

Ground-based thinning and understory treatment

Ground-based thinning (3-1 only)

Underburn (3-9)

Gate to be installed