

Pre-Operations Report

Operation Name: Above 1000 (Alternate)

County: Linn

Management Basin: Rock Creek

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres
	MC	48	45
Total		48	45

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

The operation is located within a temperate climate area. Typically the fall and winter seasons are wet. This area receives approximately 70 to 95 inches of rainfall per year. The operation is located within the *Tsuga heterophylla* Zone (*Natural Vegetation of Oregon and Washington, Franklin & Dyrness, 1973*).

The landforms are moderate to steep side-slopes of one of the un-named tributaries on the north side of Thomas Creek. There are a few bands of steep slopes mostly in the center of the sale area above and below the road. The underlying rocks are igneous origin flows and flow breccias mapped as "Basaltic and Andesitic rocks."

The soil within the operation is typed as Nasty soil. Nasty soil is a moderately deep, well-drained moderately fine-textured skeletal soil. This is a very gravelly loam soil. The 50 year average site index is 100 feet for both Douglas-fir and western hemlock. (*Soil Survey of the Cascade Unit, Miller & Steinbrenner, 1980*) The elevation of the unit ranges from 2,100 feet to 2,760 feet.

II. CURRENT STAND CONDITION:

This is a 65 year old stand that is currently classified as Understory. The overstory contains a mixture of Douglas-fir, western hemlock, big leaf maple and red alder. The understory consists of vine maple, dwarf Oregon grape and sword ferns. There are currently 2 snags per acre; 100 cubic feet per acre of sound down wood; and 6,800 cubic feet per acre of down wood in all decay classes. (*SLI, 2003*)

Table 2. Stand Inventory Information

Area	Prescription	Stand ID ¹	Species	Age	DBH	BA	TPA	SDI	Acres ²
	MC	12704	DFWH	46	15	205	178	54	48

1 The source of stand inventory information is SLI from 2003.

2 The acres are based on GIS and include roads, streams buffers, reserve areas, etc.

III. DESIRED STAND CONDITION:

This operation is located in the Rock Creek Basin. Approximately 55 percent of this basin is planned for Complex Structure stands. (*Cascade District Implementation Plan, 2003*) This basin is dominated by mature, densely stocked stands of Douglas-fir mixed with varying amounts of western hemlock, western red cedar, noble fir, and hardwoods. The diversity of tree species in these stands present good opportunities for structure based management, except for stands with very high overstory densities. The stands generally have high timber values and retain important structural components (snags, large old growth trees, large down logs, etc.) from legacy stands. This basin makes up 2.5% of the City of Salem’s municipal watershed.

The desired future condition of this stand is not designated as complex. This stand was not burned during the Tom Rock fire in 1955. The stand was protected from the fire and has received little stand management since. The only entries made to the stand were shortly after the burn to remove most of the old-growth trees. The stand responded with a flush of hardwood species filling in the gaps left behind; most of which contain no commercial value. The remainder of the stand is dense in some places and should have been thinned years ago. Planted trees will quickly fill the site and begin to produce a harvestable volume for future commercial entries.

The **Anticipated Pathway** begins with a:

- Modified clearcut retaining 5 to 7 green trees per acre.
- Reforest the unit with a mixture of Douglas-fir and some cedar trees near the streams.
- Evaluate the stand at age 10-15 years for a pre-commercial thin.
- Evaluate the stand at around age 40 for an initial entry commercial thing.

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest ¹	Desired Future	Acres
	12704	UDS	REG	Gen	48

1 The stand is expected to develop into this condition in the five to ten years after this operation is completed.

IV. PROPOSED MANAGEMENT PRESCRIPTION:

This stand will become a modified clearcut. Approximately 5 to 7 green trees per acre will remain within the operation. These trees will be at least 25 inches in diameter. Planting spots will be created to prepare the site for planting on the cable areas and the ground areas will be piled and burned. Any hardwood stumps will be treated. The site will be planted with Douglas-fir and a small amount of western red cedar seedlings.

All existing snags will be retained as safety permits. There will be at least 2 snags on average per acre remaining within the unit following the harvest operation. All existing down wood will be retained. Approximately 500 cubic feet of sound down wood will be added to the stand from the harvestable volume.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%	0%	<input type="checkbox"/>	x
Planned Quarter:			

	Conifer	Hardwood	Total
Net Volume (MBF)	1,080	208	1,288
Stumpage Value (\$/MBF)	\$350	\$250	
Estimated Gross Value	\$378,000	\$52,000	\$430,000
		Project Costs:	\$32,600
		Estimated Net Value:	\$397,400

VI. TRANSPORTATION PLANNING AND HARVESTING:

Access to the sale area will be via the South Rock Creek road, Tom Rock 500 road and Tom Rock 400 road. These roads will have had recent upgrades and improvements from 06 and 07 plan timber sales and will be in good shape. One new spur will be constructed into the middle of the unit; the spur follows an old road grade for much of the 34+00 station length. About 50% of the unit can be logged from one to two landings, the remaining area can be ground yarded.

Project work summary

- Construct 34+00 stations of new road, surface with pit-run rock

Table 5. Transportation Planning Summary (Miles).

Activity	Mainline	Collector	Rocked Spur	Dirt Spur
Construct	0	0	.64	0
Improve	0	0	0	0
Maintain	0	0	.64	0
Close/Block	0	0	0	0
Vacate	0	0	0	0

*For determination of road class either use results of the Harvest and Habitat roads classifications, or if this information is not available then low use roads are spurs, medium use roads are collectors and high use roads are mainlines. Use these same criteria when comparing the total for all AOP sales to the IP plans.

VII. AQUATIC RESOURCES AND WATER QUALITY:

There is one small non-fish bearing stream within the operation. This stream drains into Thomas Creek. The overstory along this stream consists of red alder, big leaf maple and Douglas-fir. The understory consists of salmonberry, ferns and vine maple.

Management activities within riparian areas of streams will focus on achieving properly functioning aquatic and riparian habitat conditions over time. Riparian Management Areas (RMAs) will be established immediately adjacent to streams for the purpose of protecting aquatic and riparian resources and maintaining the functions and ecological processes of the streams. The Management Standards for Aquatic and Riparian Areas found in the *NWO State Forests Management Plan* (pg. J-1 – J-16) will be followed within these RMAs.

The following measures will be used to minimize impacts to streams: 1. No ground based equipment will be allowed within 25 feet of any non-fish stream, 2. There will be seasonal restrictions as to when ground yarding and road construction will be allowed (i.e. during dry seasons), 3. Erosion control measures will be used on areas of soils exposed during road construction or improvement, 4. In the cable portions of the operation, one end suspension of logs during yarding will be required, 5. Road ditches will be disconnected from streams, 6. Road maintenance will be required during log hauling.

VIII. T&E SPECIES CONSIDERATIONS:

The operation was surveyed for Northern Spotted Owls during the 2006 survey season with no responses. The operation will be surveyed again in 2007. The operation is located outside of the East Thomas NSO site. A portion of the proposed road construction will pass through the very outside edge of the NSO

site. A biological assessment has been prepared by the Northwest Oregon Area Biologist. This assessment has been reviewed by the Oregon Department of Fish and Wildlife and the US Department of Fish and Wildlife. The biological assessment and the comments from both agencies will be reviewed by the Program Director and the Area Director who will then determine how to proceed with the planned operation.

The operation area was checked against District knowledge for any listed plant location. The operation area was also checked against the Oregon Natural Heritage Program's database of known listed plant locations. No listed plant records were identified within the operation area.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

There are a few bands of steep slopes mostly in the center of the sale area that appear to have potential risk to the un-named tributary. The initial hazard and risk assessment from the geotechnical specialist is moderate. If these steep sloped areas remain within the sale area as the sale layout proceeds, the geotechnical specialist will be consulted to determine if a field visit is needed.

X. RECREATION RESOURCES:

There are no developed recreation resources within the operation.

XI. CULTURAL RESOURCES:

Pre-operation reconnaissance revealed no visible cultural resource features or artifacts. If discovery is made, the cultural resource will be protected and field staff will consult with the Cultural Resource Specialist in Salem.

XII. SCENIC RESOURCES:

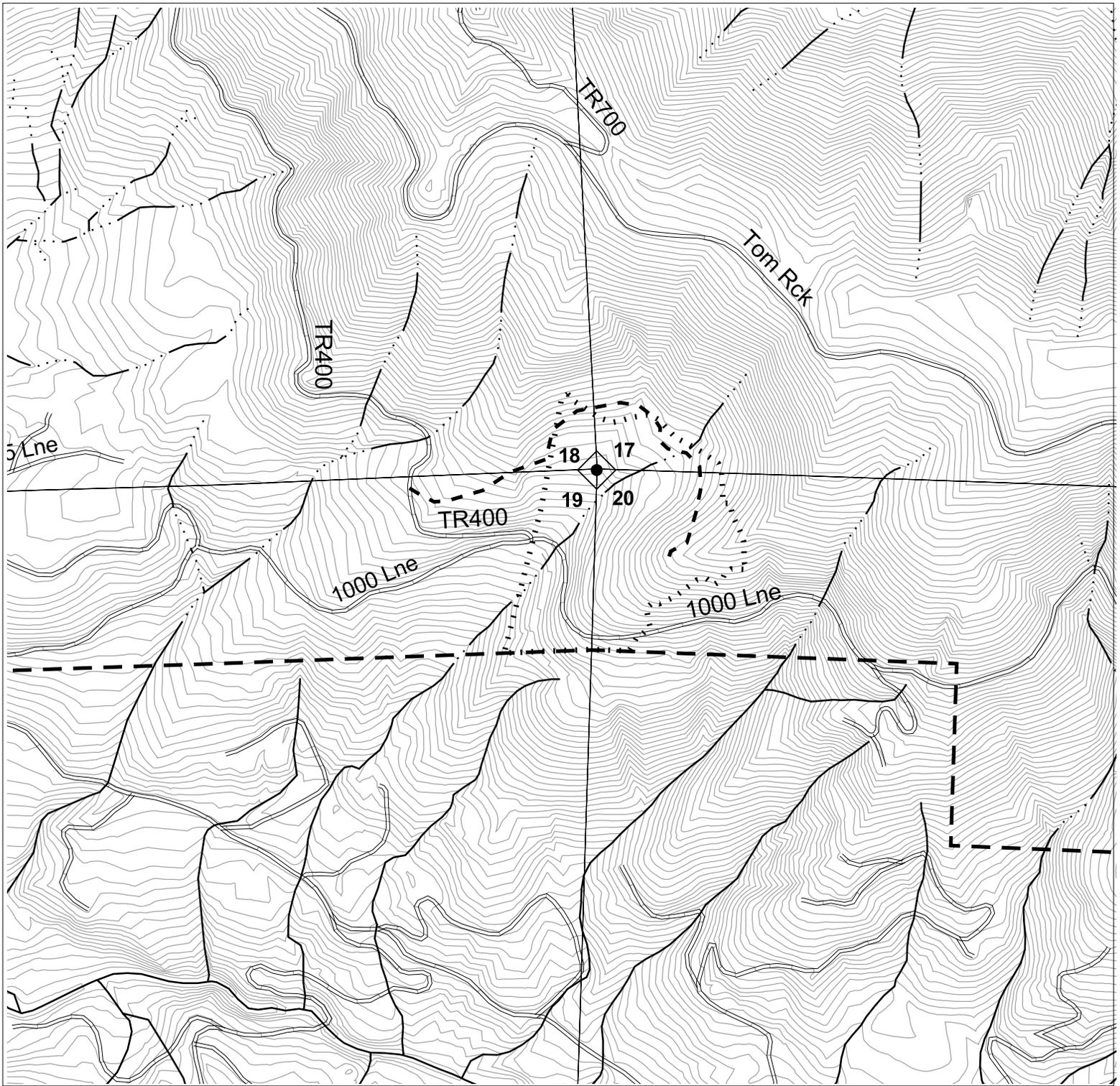
There are no scenic resources within or affected by the operation.

XIII. OTHER RESOURCE CONSIDERATIONS:

There are no other resource considerations.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

The operation contains Focused Stewardship, Aquatic and Riparian Habitat for one small type N stream. See Section VII, Aquatic Resources and Water Quality for the management guidelines to be utilized.



ABOVE 1000 (Alt)
 --TOPOGRAPHY--
 FY '08 SALE PLAN
 NORTH CASCADE DISTRICT

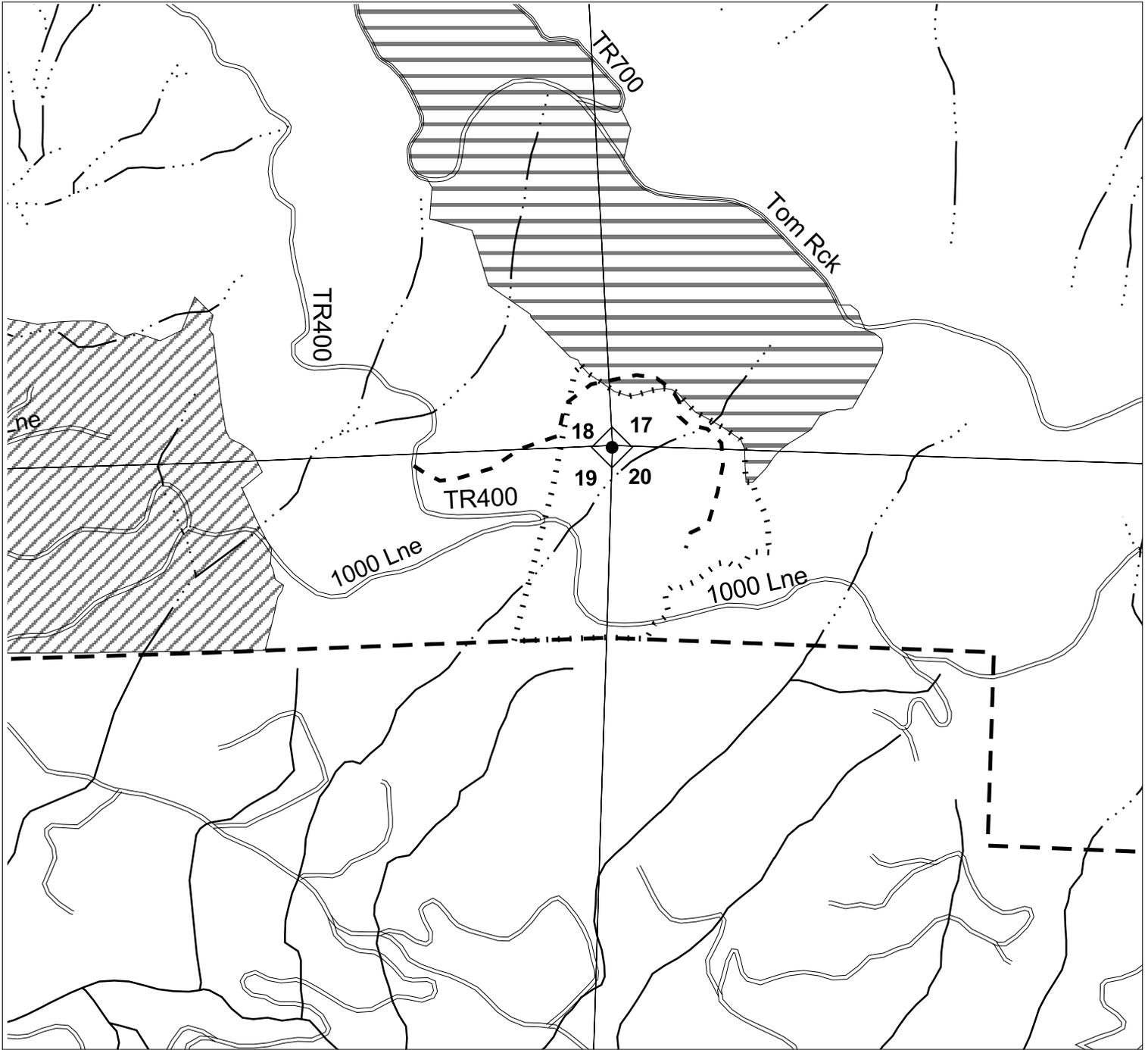
Portions of Sections 17, 18, 19 and 20
 T10S, R3E W. M.
 Linn County, OR

Approximate Net Acreage:
 MC - 45

- New Road Construction
- Santiam State Forest
- Above 1000
- Roads
- Streams
- FISH
- NONFISH
- UNKNOWN
- 20 foot contours



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ABOVE 1000 (ALT)
 --DESIRED FUTURE CONDITION--
 FY '08 SALE PLAN
 NORTH CASCADE DISTRICT

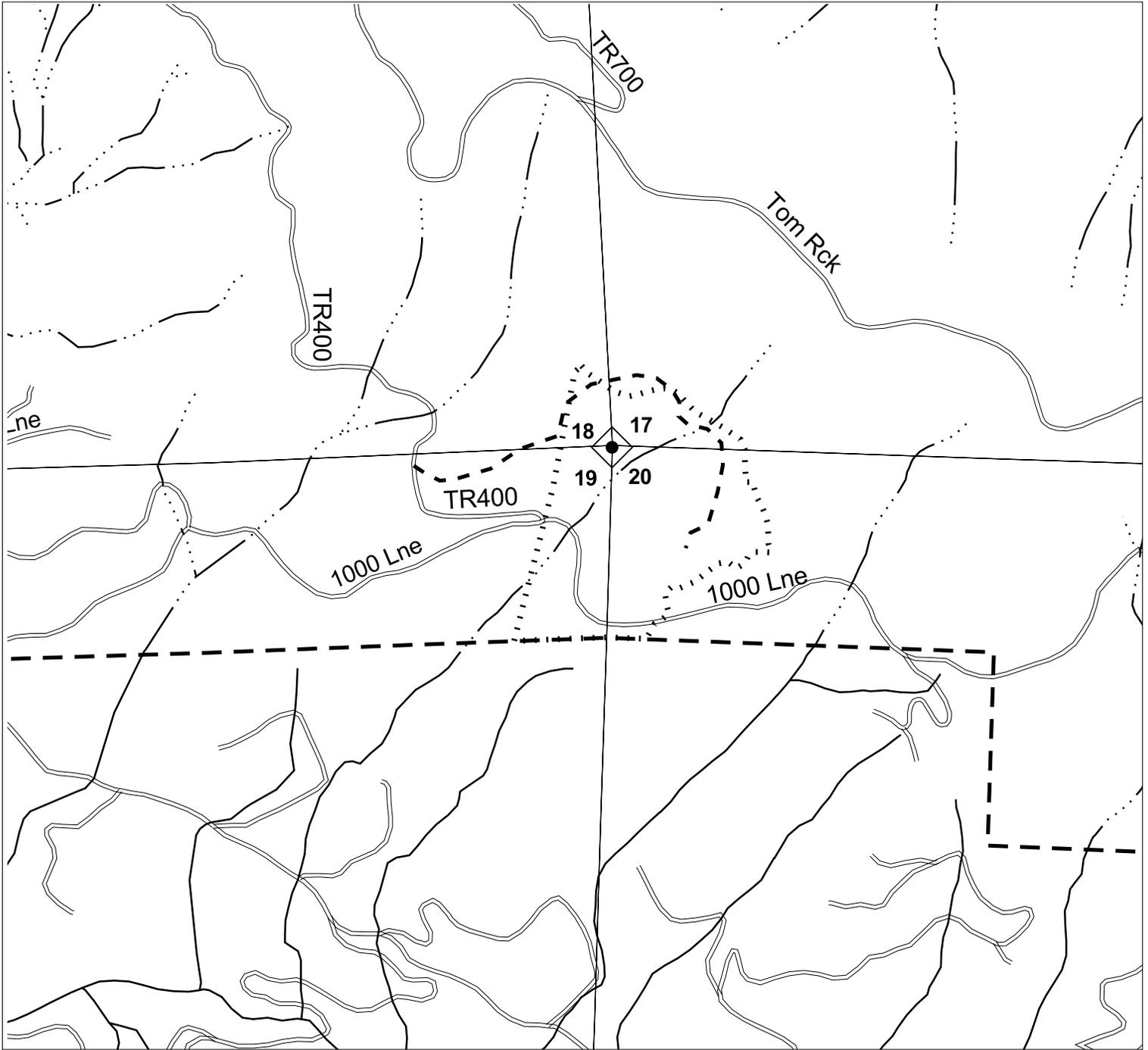
Approximate Net Acreage:
 MC 45

Portions of Sections 17, 18, 19, 20, and 21
 T10S, R3E W. M.
 Linn County, OR

- New Road Construction
- Santiam State Forest
- Above 1000
- Roads
- Streams
- FISH
- NONFISH
- UNKNOWN
- Desired Future Condition
- LYR
- OFS



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ABOVE 1000 (ALT)
--KEY RESOURCES--
FY '08 SALE PLAN
NORTH CASCADE DISTRICT

Portions of Sections 17, 18, 19, 20 and 21
 T10S, R3E W. M.
 Linn County, OR

Approximate Net Acreage:
 MC 45

-  New Road Construction
-  Santiam State Forest
-  Above 1000
-  Roads
-  Streams
-  FISH
-  NONFISH
-  UNKNOWN



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Preliminary Biological Assessment of the Above 1000 Timber Sale: Potential Impacts of Proposed Road Construction to the East Thomas Creek Northern Spotted Owl Site

Prepared by: Clint Smith

Date: 29 January 2007

Acknowledgements: The habitat assessment for the East Thomas Creek spotted owl circle was conducted by Rod Kraemer for his 3 February 2005 "Preliminary Biological Assessment of the proposed Kilo Thin timber sale: potential impacts to East Thomas Creek northern spotted owl site."

Introduction

Purpose. The proposed Above 1000 timber sale (FY08) is entirely located beyond 1.2 miles of the East Thomas Creek northern spotted owl activity center (owl circle). However, a portion of the proposed access road necessary to harvest some of the sale is located within the owl circle. The purpose of this memo is to summarize the habitat conditions within this owl circle and within the proposed road construction within the owl circle. I will discuss anticipated effects of the proposed road construction on spotted owl habitat quality. I also will offer a risk assessment and discuss implications with regards to the rescinded U.S. Fish & Wildlife Service "Incidental Take Guidelines" (Guidelines) (U.S. Fish & Wildlife Service 1990).

Policy Direction .

ODF Policy. Current policy ('Northern Spotted Owl Management Measures,' Memo from Ross Holloway, October 23, 2000) states: "In all cases, we will follow practices that 'avoid take' of northern spotted owls...The...area biologist will evaluate planned sales by applying the (incidental take guidelines) and considering the location of the activity (proximity to nest or activity center); the size of the operation; the nature of the silvicultural prescription; and other pertinent factors...Decisions on whether to proceed with sales within owl circles will be made by the Program Director and Area Director..."

Rescinded USFWS spotted owl take guidelines. The rescinded Federal Incidental Take Guidelines (U.S. Fish & Wildlife Service 1990) recommended that to avoid incidental take of northern spotted owls, managers avoid any harvest activity which results in less than 500 acres of suitable habitat within a 0.7-mile radius of a spotted owl activity center. The guidelines also recommended that within the Oregon Cascades province, managers avoid any harvest activity that results in less than 1182 acres of suitable habitat within a 1.2-mile radius of the activity center. The primary difficulty of performing this analysis for the East Thomas Creek site includes identifying which stands provide suitable habitat.

Background

Site Information. In 2003, BLM heard a male two times at night (within five days) and Kingfisher Ecological (ODF's contract spotted owl surveyor) heard a male one time at night. This site was designated status unknown and the May 29th location was used as the response area location. A pair attempted to nest at this site in 2004, but they failed to produce young. Neither bird would moult, so banding status is unknown. Site status was upgraded to 'Pair', and AC was placed at the nest tree. There were no responses in 2005 or 2006. Site status remains 'Pair' with 2 years of vacancy (Kingfisher 2006).

Sale Area Information. Because the sale area is located outside the 1.2-mile radius Owl Circle, I will only discuss the stand type within the Owl Circle where the proposed road construction will occur. According to ODF's OSCUR timber inventory database (Stand99), the road will be constructed through a 45 year-old (in 2006) stand averaging 17 inches DBH (in 1999), consisting of fairly well-mixed western hemlock, Douglas-fir, and bigleaf maple.

Prescription. Road construction will include clearing a 45-foot wide strip, which will not be reforested. Approximately 935 feet of new road construction is planned within the outer portion of the East Thomas Creek owl circle, impacting about one acre of suitable habitat within the owl circle.

Assumptions

In this section, I will cite research conducted using spotted owls living in 2nd growth stands on ODF ownership within the northern Oregon Coast Range. I understand that due to differences in geographic location and possibly due to ecosystem differences, the results of this research may not be directly applicable to spotted owls within ODF's North Cascades District. However, the ODF research is some of the best available information on spotted owl use of 2nd growth habitats. Because young, 2nd growth stands predominate on the ODF ownership within the East Thomas Creek spotted owl circle, I believe that the results of the Coast Range research are relevant to this situation.

Defining the home range. The home ranges and habitat use of the birds using the East Thomas Creek spotted owl site are not known. Known owl locations are plotted in Figure 1, but this represents incomplete information.

Anthony et al. (1999) found that spotted owls in 2nd growth forests in the northern Oregon Coast Range frequently have very large home ranges, extending well beyond 1.5 miles. In the absence of better information on the home ranges of any birds using the site, the following discussion on the habitat situation will describe stand conditions within a 0.7 and a 1.2 mile radius around the established activity center, as recommended by the Guidelines.

Defining Suitable Habitat. It is difficult to define suitable habitat for spotted owls in younger forests. Documentation provided with the "Procedures Leading to Endangered Species Compliance for the Northern Spotted Owl" (U.S. Fish & Wildlife Service, 1990) describes spotted owl suitable habitat as stands that exhibit:
"...moderate to high canopy closure; a multilayered, multispecies canopy dominated by large overstory trees; a high incidence of large trees with large cavities, broken tops, and other indications of decadence; numerous large snags; heavy accumulations of logs and other woody debris on the forest floor; and considerable open space within and beneath the canopy. These attributes are usually found in old growth, but they are sometimes found in younger forests, especially those that contain remnant large trees or patches of large trees from earlier stands...It is important to note that the age of forests is not as important a factor in determining habitat suitability as are vegetational and structural components..."

The majority of stands used by spotted owls on ODF ownership do not meet the above definition of suitable habitat.

ODF has some data on the use of younger forest types from North Coast spotted owl sites on ODF lands. An attempt to create a habitat suitability index (HSI) for spotted owls was conducted by Islam et al. (1997). Although this investigation was limited by various factors, the major finding was a positive correlation between owl site occupancy and the acreage of stands averaging 18 inches or greater in DBH (according to ODF's OSCUR timber inventory database) within ¼ and ½ mile of the owl site activity center.

A telemetry study of several owls on the Clatsop State Forest (Anthony et al. 1999) found many spotted owl foraging locations in smaller diameter stands averaging 12-17 inches and greater. The investigators in the HSI study noted that many owl responses had occurred in stands ranging from 12-17 inches in average DBH, but that there was no correlation between this size class and owl occupancy. They thought that some stands less than 18 inches DBH probably were suitable to some degree, but the attributes that determine that suitability were not apparent. The telemetry study and a concurrent study of habitat in areas where owls were located (Tappeiner et al. 1999) have found that hardwoods, especially hardwood/conifer edges, are an important component of spotted owl foraging habitat in both the Clatsop and Elliott State Forests. The habitat study also found that spotted owl nesting and foraging sites had larger average DBH and fewer trees per acre than non-use areas. So, other factors in addition to DBH that contribute to spotted owl habitat quality likely include hardwoods (especially hardwood/conifer edges), stand age, snags, down wood, and horizontal diversity.

My observation is that within many of the younger stands used by spotted owls on ODF ownership, suitable habitat occurs at the patch rather than at the stand level. This may help explain why spotted owls living in landscapes on ODF ownership, with amounts of 'habitat' that greatly exceed the minimum recommendations of the Incidental Take Guidelines, have such poor demographic performance (Anthony et al. 2000). It may take many more acres of younger stands to provide the number of suitable habitat patches that would be contained in a much lesser acreage of old-growth forest. The energetics of a bird moving between the more sparsely distributed habitat patches also may reduce viability. Therefore, retaining 2nd growth 'habitat' at or near the minimum standards could result in negative impacts to individual spotted owl sites.

Because of the correlation between acreage of 18"+ DBH stands to spotted owl occupancy (Islam et al. 1997), it may be reasonable to assume that these stands provide suitable habitat for spotted owls. However, the majority of the 18"+ DBH stands on ODF ownership do not contain all the structural components described in the earlier paragraph. From a biological perspective, not all stands averaging 12"+ DBH provide suitable habitat for spotted owls. Indeed, I routinely make determinations that 12-17" DBH stands within and adjacent to proposed sale areas do not provide suitable spotted owl habitat based upon stand density, structural diversity, and tree diversity (Northern Spotted Owl Surveying on State Forest Lands, General File # 3-2-1-330.2).

Habitat Mapping for this BA. Rod Kraemer developed a habitat assessment and map for the East Thomas Creek owl circle in 2005, when preparing the 'Preliminary Biological Assessment of the proposed Kilo Thin timber sale: potential impacts to East Thomas Creek northern spotted owl site,' finalized 3 February 2005. His methods are described in detail in that BA, and were based on the OSCUR timber inventory, SLI timber inventory, aerial photo interpretation, and ground-truthing. I present the same habitat map within this BA.

All stands were digitized and acreages were calculated using ArcView.

Impact Assessment and Discussion

Landscape Analysis. Figure 1 shows the spotted owl activity centers, owl circle, spotted owl observations, timber sale location, stand ages, and average stand diameters (based on ODF's OSCUR timber inventory database, Stand99) on ODF ownership within the East Thomas Creek owl circle. Figure 2 shows the results of the photo- and ground-based habitat assessment.

There are 400 acres of suitable spotted owl habitat within 0.7 miles, and 1102 acres of suitable owl habitat within 1.2 miles of the East Thomas Creek northern spotted owl activity center (Table 1).

It is likely that a spotted owl living within this landscape would range beyond 1.2 miles. This is supported by the relatively large home range sizes observed during the radio-telemetry study conducted on ODF lands in Clatsop County (Anthony et al. 1999).

Anticipated Effects of the Sale Prescription. I have seen no data on the impacts of road rights-of-way on spotted owl quality. I have asked this question of several spotted owl biologists. All of these biologists seemed more concerned about 'where the road was going to access' than the habitat impacts of the actual road construction. Therefore, I anticipate that the planned 45-foot wide road corridor within the owl circle will have minimal impact on the habitat quality of the surrounding stands.

Discussion

Landscape Condition. Suitable habitat amounts within both the 0.7- and 1.2-mile radius circles around the East Thomas Creek activity center currently are below the recommendations of the Incidental Take Guidelines. Planned road construction within the owl circle will remove about 1 acre of suitable habitat within the owl circle in a long, narrow configuration, but I anticipate that this activity likely will have little effect on habitat suitability of the surrounding stands.

Due to the marginal nature of much of the suitable habitat within this circle, it is likely that this bird requires larger acreage of suitable habitat and/or has a larger home range.

Risk Assessment

Biological Risk Assessment. The proposed road construction is located on the outer edge of the 1.2-mile radius circle around the East Thomas Creek activity center. Although habitat acreage within this owl circle is low, I anticipate that the proposed road construction will have little impact on habitat quality on the adjacent stands. Therefore, I anticipate that this activity poses a 'Low' risk to future survival and viability of the birds using this site.

Compliance with the Incidental Take Guidelines. Habitat acreages for the affected owl circle are below the recommendations of the Incidental Take Guidelines, and the proposed road construction will remove about 1 acre of suitable habitat. Therefore, the proposed road construction would not be consistent with the recommendations of the Incidental Take Guidelines.

Consultation with ODFW

Rod Krahrmer with the Oregon Department of Fish & Wildlife (ODFW) has reviewed the final draft of this BA, and has provided the following comments:

"I concur with the conclusion that proposed road construction in association with the Above 1000 timber sale poses a 'low' risk to the continued viability of the East Thomas northern spotted owl site. In particular, spotted owls have not occupied the East Thomas site the last two years and the proposed road construction will impact only 1 acre of relatively low quality foraging habitat for spotted owls in the outer periphery of the 1.2-mile circle."

Literature Cited

- Anthony, R.G., B. Glenn, K. Swindle, & M. Hansen. 1999. Home range and habitat use of northern spotted owls on state forest lands in the Oregon Coast Range. Final research report to the Oregon Department of Forestry. 114 pp.
- Anthony, R.G., M.C. Hansen, K. Swindle, & A. Ellingson. 2000. Effects of forest stand manipulations on spotted owl home range and use patterns: a case study. Final draft report to the Oregon Department of Forestry, November 2000. 16 pp.
- Bayless, T., S. Meiman, A. Ellingson, and B. Glenn. Effects of forest stand manipulations on spotted owl home range and use patterns: a case study. Final report to the Oregon Department of Forestry, November 2001. 22 pp. plus figures and appendices.
- Islam, K., R. Anthony, M. Hansen, and E. Forsman. 1997. Habitat Suitability Index for the northern spotted owl on Oregon Department of Forestry lands. Report to the Oregon Department of Forestry. April 1997.
- Kingfisher Environmental Consultants, Inc. 2006. Northern spotted owl surveys, Oregon State Lands, 2006. Presented to Oregon Department of Forestry. 135 pp.
- Tappeiner, J., T. Nierenberg, J. Bailey, and N. Poage. 1999. Characterizing northern spotted owl home habitat on state forest lands in the Oregon Coast Range. Report to Oregon Department of Forestry. 85 pp.
- U.S. Fish & Wildlife Service. 1990. Procedures leading to endangered species compliance for the northern spotted owl. U.S. Fish and Wildlife Service, Region 1, July 1990. 15 pp.

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Table 1. Acres of suitable and non-suitable northern spotted owl habitat within 0.7 mile and 1.2 mile radii of the East Thomas spotted owl activity center.

Landowner	0.7-mile Radius		1.2-mile Radius	
	Suitable	Non-suitable	Suitable	Non-suitable
ODF	142	89	545	330
BLM	209	82	420	273
Other	49	413	137	1198
Totals	400	584	1102	1801