

Pre-Operations Report 2008 Sale

Operation Name: West Windy Thin
County: Douglas
Management Basin: Umpqua

Table 1. Operation Areas, Types and Acres

Area	Type of Operation ¹	Gross Acres	Net Acres
1	Light Thinning with Group Selection	96	90
2	Light Thinning	37	37
3	Unthinned Patch with snag creation	11	0
4	Heavy Thinning	23	20
5	Light thinning with Group Selection	83	83
6	Light Thinning	4	4
7	Modified Clearcut	11	11
8	Modified Clearcut	24	24
Total		289	269

¹ See "Harvest Goal and Type Definitions for State Forest Lands".

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

This sale is on the western side of the Windy Creek tract of Board of Forestry land. A ridge runs north-south, splitting the sale into western and eastern facing slopes. The lower portions of the slopes in the west are moderate (less than 35%), while the upper portions approach 65%. The ridge tops are broad, rolling with moderate slopes 15-35%. The sale is in the upper third of the slopes for the most part. Draws are present, but few would be considered stream channels. Soils are variable. The northwestern area has shallow rocky soils. The southwestern portion has relatively deeper soils.

Soils in the sale area consist primarily of the Josephine-Speaker (117F) complex. This soil unit is moderately deep and well drained. Seedling mortality is also a concern for this type.

Also present are the Acker-Norling (5F) complex and the Kanid-Atring (120G) complex. Soils of these types are moderate to deep and well-drained. Seedling mortality is also a concern for this type. All of these soil types are susceptible to windthrow during periods of strong winds when the soil is saturated.

II. CURRENT STAND CONDITION:

Overstory: The stands in the sale area are predominantly Douglas-fir with minor amounts of grand fir, sugar pine, and incense cedar. A small amount of Madrone and chinquapin make up the hardwood component. Stand densities are very high at 50-86% of maximum stand density.

Area 1 (5039) is a UDS stand whose canopy is closing in (CSC), made up of Douglas-fir (BA-110) and Grand fir (BA-31), small amounts of incense cedar, and western hemlock. The stand is 173 SF of BA on the average and has a greater component of vegetation, mostly salal, than the other units. Hardwoods include small amounts of chinquapin, Madrone and maple. Area 1 is the only unit with maple. The maple and hemlock indicate a slightly wetter site than the other units.

Areas 2 and 3 (5015) are layered with small patches of dense closed canopy (CSC). There's about 245 total square feet basal area: mostly Douglas-fir, with incense cedar, grand fir, and sugar pine. Madrone makes up 1/5th of the basal area.

Area 4 (5014) is a dense closed single canopy stand of Douglas-fir (212 SF), grand fir, and incense cedar (18 SF BA). Madrone is about 10% of the basal area.

Areas 5 and 6 (5012) are Douglas-fir with grand fir and small amounts of incense cedar, sugar pine. Madrone and chinquapin are 32% of the basal area.

Areas 7 and 8 (5011) are the most dense (333 TPA) of the sale area. The live crown ratio is small, meaning the live branches are at the very top of the tree. These stands are heavy toward Douglas-fir (192 SF BA), and a small amount of grand fir and incense cedar.

Understory Vegetation:

The understory vegetation is described below. The vegetative cover is more pronounced in stand 5039 (Area 1), but the stand canopy is closing in. Note that there are some trees less than 15 feet in the understory, but are suppressed, and might not respond (increase their growth rate) well to increased light. The percentage shrub cover is actually less than the chart shows since there are multiple layers of shrubs that may exceed 100%. The vine maple in area 1 is overtopping the salal, two separate layers that could potentially add to 100% each. The chart gives a general description of what is there and can be interpreted as a sparse understory.

Table 2. Understory Vegetation.

Area	Stand	Shrub Cover	Trees 15'-	Primary Species
1	5039	42%	7%	vine maple, salal (22%), oceanspray,
2,3	5015	14%	11%	dwarf Oregon grape oceanspray, sword fern
4	5014	3%	5%	dwarf Oregon grape
5,6	5012	19%	2%	Salal, oceanspray, hazel, Oregon grape
7,8	5011	13%	5%	Salal, Oregon grape, whipplevine, bear grass

Snags:

In most stands the quantity of snags is approaching the thresholds for what ODF considers old forest structure, but the quantity of large hard conifer snags is insufficient to maintain this trend without mortality. This would indicate an opportunity to create large hard snags, especially in area 2 and 3. In all areas, existing snags will be retained

unless they are a safety hazard. In areas 4, 7, and 8, several strategies will be employed to obtain the landscape goal of 2 hard snags per acre, including: tree topping and/or girdling, and retaining additional green trees. In thinned areas it is anticipated that additional snags will develop during yarding activities by leaving, topping, or girdling damaged rub trees, tail trees, lift trees, and/or intermediate support trees.

Table 3. Snags

Area	Stand	Species	12"+	24"+	12"+ Class 1, 2	Total	SE
1	5039	Conifer	7	1	2	14	65%
2,3	5015	DF, MA	2	2	0	11	54%
4	5014	DF, IC, MA	9	7	3	21	31%
5,6	5012	DF, MA	2	2	1	17	47%
7,8	5011	DF	6	3	2.4	16	57%

Down woody debris:

For all harvesting activities, the existing downed woody debris (table 4) will be retained. In Areas 2, 3, 5, 6, 7, and 8, additional conifer trees and/or conifer logs will be retained to meet the landscape targets for down wood as prescribed in the FMP (p. 4-52) and implementation plan (p. 23). Obvious defect in conifer logs will be bucked out in the unit to enhance down wood levels. Thinning the stands will cause some trees to blow over adding to the down wood. In thinned areas it is anticipated that additional snags will develop during yarding activities by leaving, topping, or girdling damaged rub trees, tail trees, lift trees, and/or intermediate support trees. In addition to these strategies in areas 4, 7, and 8, standing green trees over 15" will be left for future down wood recruitment.

Table 4. Existing Down Woody Debris

Area	Stand	Class 1, 2 (ft ³)	Total	SE
1	5039	779	5077	17%
2,3	5015	137	2042	30%
4	5014	802	8769	42%
5,6	5012	311	3793	19%
7,8	5011	0	1375	21%

Current Stand Structure: The sale area will be treated as eight distinct stands with different treatments reflecting the variation within those stands. In the north (area 1) tree canopies are just beginning to close (CSC). The timing is right for a thinning to allow this stand to continue a fast growth rate. Area 2 in the northwest is a stand that has a lot of layering (LYR) and patches of closed canopy (CSC). ODF will create snags in Area 3 and may use some trees for skyline anchors. Area 4 is a dense stand of conifer (CSC) that has a lot of flexibility for management. It will be opened-up into a UDS stand. Area 6 is a dense stand (CSC) with some layering. Area 7 is a very dense homogeneous stand of Douglas-fir whose crowns have lifted and would not respond well to a thinning. Area 8 is similar; very dense with small crowns.

Insects and disease: There are no insects or disease problems present other than natural levels that have been observed in initial field visits. The sale is in an area where

white pine blister rust is found and fir engraver beetles reside. Continued reconnaissance may reveal minor levels of insects or disease, but not likely in epidemic proportions.

Table 5. Stand Inventory Information

Area	Prescription	Stand ID ¹	Species	Age 08	DBH	BA		TPA	SDI (2"+)	Acres ²
						Con	Tot/Con/HW			
1	Light Thinning	5039	All	48	12	173/154/19	198/21	52.43	96	
1	with Group Selection	Target ³			12	139/110/19	135/21	39	96	
2	Light Thinning	5015	All	88	14	245/181/64	93/136	78	37	
2		Target ³			14	193/150/43	66/110	39	37	
3	Create Snags	5015	All	88	14	245/181/64	93/136	78	11	
3		Target ³			14	245/181/64	93/136	78	11	
4	Heavy Thinning	5014	All	68	13	280/240/40	227/84	86	23	
4		Target ³			18	100/80/20	104/50	28	23	
5	Light Thinning	5012	All	68	12	220/151/69	146/164	74	83	
5	with Group Selection	Target ³			14	160/115/45	108/124	40	83	
6	Light Thinning	5012	All	68	12	220/151/69	146/164	74	4	
6		Target ³			14	185/140/50	120/140	45	4	
7	Modified Clearcut	5011	All	68	11	217/204/13	300/33	67	11	
7		Target ³			18	35/30/2	7/5	5	11	
8	Modified Clearcut	5011	All	68	11	217/204/13	300/33	67	24	
8		Target ³			18	35/30/2	7/5	5	24	

¹ The source of stand inventory information is SLI from the year 2003. Trees over 5.6 inches.

² The acres listed above are the total gross acres based on GIS including roads, and streams buffers.

³ The Target identifies expected stand characteristics (DBH, BA, TPA and SDI) after harvesting has been completed. Target is for conifer. Actual range of residual conifer basal area will vary up or down by 10%.

III. DESIRED FUTURE CONDITION/VISION:

Each stand has a different desired future condition reflected in table 6 and 6B. Variable treatments across the landscape will give it more heterogeneity and increased growth and vigor. These harvests are designed to blend well with the landscape and are an example of a management strategy designed to create a variety of stands and structures across the landscape.

Areas 1 will be treated with a light thinning and group selection patch cuts. The thin will allow light to the canopy floor and increase growth of shrubs and tree seedlings. The treatments will allow stand to develop UDS characteristics and larger trees. Patch cuts will have GTR and underplanting.

Area 2 will be treated with a light thinning to remove some smaller trees and ladder fuels. Snags will be created. The goal is to grow this stand into OFS.

Area 3 will be an unthinned patch or an anti-gap; dense patches where wildlife have dense cover. Snag creation in this area provides future nest sites and DWD.

Area 4 will be a heavy thinning to develop an understory and future layered stand. Allow natural seeding and underplant to 200 tpa.

Area 5 will be a light thinning with group selection patch cuts. The goal is to develop an understory of vegetation and conifer seedlings. Allow natural seeding and underplant patch cuts to 200 tpa.

Area 6 will be a light thinning to remove small suppressed trees and ladder fuels.

Area 7 and 8 will be modified clearcuts. GTR will be retained on the edge of the unit in area 7 and scattered in area 8 with two patches of GTR in the corners. Area 7 and 8 will have 7-10 GTR per acre. These stands will be planted to the same natural mix of conifer that currently exists. The new stand will have additional structure than the current closed single canopy.

Table 6. Stand Structure Information:

Area	Stand ID	Current	Post Harvest ¹	Desired Future	Net Acres
1	5039	UDS (CSC)	UDS	UDS	90
2	5015	LYR	LYR	OFS	37
3	5015	LYR	LYR	OFS	0
4	5014	CSC	UDS	LYR	20
5	5012	UDS (CSC)	UDS	OFS	83
6	5012	UDS	UDS	OFS	4
7	5040	CSC	REG	CSC	11
8	5011	CSC	REG	CSC	24

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 sale area will feature various thinning prescriptions, snag creation, patch cuts, and regeneration harvest (see section III above). The thinning prescriptions will be basal area thinnings from below to remove the suppressed, intermediate and some of the codominant trees from these stands. There will be light thinnings in areas 1, 2, and 6, and a moderate thinning in area 5. Snags will be created in areas 2 and 3. Area 4 will have a heavy thinning. Area 7 will have a modified clearcut with GTR on the edge, and area 8 will have a modified clearcut with scattered and/or clumped green trees.

Desired Silvicultural Results: See Partial Cut Target Stand in Table 6.

The purpose of the light thinnings is to reduce moisture stress and competition to increase the health and vigor of the residual conifer and hardwood trees as well as reduce the likelihood of insects, disease, wildfire, or other stand replacing events. Removing some of the ladder fuels will help prevent fire from reaching the canopies and

killing the dominant overstory. The thinning with interspersed patch cuts in area 1 and 5 will retain structure and horizontal layering in a pattern across the landscape rather than on every acre. Hardwoods retained in the light thinnings (areas 1, 2, and 6) will contribute to the layering. The majority of hardwoods will be retained in areas 1, 2, and 6, especially the dominant hardwoods for an upper-mid canopy layer. After the light thinning is accomplished, approximately 50-60% of the canopy will be maintained outside the patch cut areas. Some of the healthy advanced understory will be reserved to promote layering (especially in area 2 and 3). An upper diameter limit will be established to preserve the largest and healthiest trees in the stands (Areas 1 – 6). The largest and healthiest trees will be retained throughout the thinned areas, as well as any trees that have the Old Growth characteristics of rough bark, large limbs and deformed tops. This combination of partial cutting and group selection emulates the natural processes behind the development of LYR and OFS stands.

Approximately 5% of the sale area will remain in unthinned patches (anti-gaps) at least 1/2 acre in size. Unthinned patches occur randomly throughout the sale as a result of logging constraints, timber that is at or below the prescribed density, or timber that is not merchantable. Opportunities to place patch cuts (gaps) in area 1 and 5 will be explored in the sale layout process. These patch cuts provide an opportunity to create more structure and layering across the landscape. Interplanting to 200 tpa in the patch cuts in areas 1 and 5 will occur where natural seeding and or shrub brush is insufficient to provide future structure and layering. Patch cuts will be ¼ to one acre openings in area 1 and 5. Patch cuts may also have green tree retention, especially minor species such as sugar pine. Depending on the size of the logging equipment used, some of the openings will occur near roads, where additional slash will create hiding cover, and open areas will return to shrub, or be planted with seedlings.

Area 7 and 8 are overly dense stands lacking in complexity and structure, or understory. They are good candidates for a modified clear-cut, with green tree retention, from a selection of the largest and most vigorous trees. Area 4 is similar in its density and smaller crowns, but has more flexibility to respond to a heavy thinning that retains the snags, and will encourage layering of shrubs and conifer. Area 7 and 8 will eventually be young vigorous stands of conifer with residual structural components, large GTR, DWD, and snags. Area 4 will have the opportunity of creating a young vigorous stand or allowing vegetation to grow underneath the canopy of 80-100 SF BA.

Snags: See table 3 and its explanation. Hard snags will be created throughout the sale area. Area 2 and 3 will be emphasized for snag creation to encourage those stands toward OFS structure. Area 4 has a significant amount of existing snags. These snags will be retained as safety allows. All pre-existing snags that are not safety or fire hazards will be retained. Any snags that are felled will be retained for down woody debris. An estimated 1 to 1.5 snags per acre will occur as a result of logging and natural mortality. An additional 1 snag per 2 acres on the average will be created throughout the sale area by tree topping or girdling.

Down woody debris: Approximately 100 cu. ft per acre of class 1 debris will be added

through normal logging operations including trees that are damaged and eventually blow down and cull log segments required to be left on the ground. Additionally any time a stand is opened up from management activities the possibility of isolated blow down or top breakage exists. No yarding of down woody debris will be permitted.

Fuels Modification: Residual slash, tree tops and limbs, will be burned if unacceptable accumulations remain after harvest. It is more likely that slash piles at the landing will be burned than underburning the thinning units. The regeneration harvests are potential candidates for site-preparation burning.

Regeneration: Larger patch cuts will be planted and some will be left with green trees for natural seeding. The Regeneration harvests will be planted to approximately 400 tpa in a mixture of conifer that mimics the natural mix of conifers that occur presently.

V. ESTIMATED TIMBER AND REVENUE OUTPUTS:

Table 7. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%			100%
Planned Quarter:		3	

	Conifer	Hardwood	Total
Net Volume (MBF)	1,800	0	1,800
Stumpage Value (\$/MBF)	\$300	0	
Estimated Gross Value	\$540,000	0	\$540,000
		Project Costs:	\$40,000
		Estimated Net Value:	\$500,000

VI. HARVESTING AND ACCESS CONSIDERATIONS:

Access: One of the goals of this sale is to improve access by linking three road systems from the west, north, and east. This will help firefighters respond quicker to an incident and improve our ability to manage the forest. The road from the west will link a rocked road across private land to the sale area. The road to the north leads through a BLM road system. The roads to the east go through ODF managed forests. A half mile of the roads will be rocked, allowing all season logging for area 6, 7, and a 2/3 of area 5.

Harvesting: The majority of this sale will be cable yarded. Some of the lower slopes and rolling ridges will be tractor yarded or shovel logged. Most of the logging will be done in the summer months, but areas 5, 6, and 7, will have a rocked road for winter logging.

Table 8. Transportation Management Summary (Miles)

Activity	Mainline	Collector	Rocked Spur	Dirt Spur
Construct				1.6
Improve			0.5	
Maintain				4.1
Close/Block				0.2
Vacate				

VII. AQUATIC RESOURCES AND WATER QUALITY:

This sale is in the upper third of the slopes (Areas 1,2,3,4, and 6) in a mesic area where most drainages are dry draws. There are some seasonal streams in these stands, but surveys will be conducted during the sale preparation process to determine if any of them are perennial. None of the streams within the sale area are fish-bearing. The seasonal streams are upper tributaries to Windy Creek, a Coho salmon stream, on the eastern side of the ridge and tributaries of Bear Creek on the west. The streams will be posted according to the Southwest Oregon Forest Management Plan riparian management area rules. To the extent that harvesting will be occurring in the “inner” and “outer” RMA zones, live tree and snag retention will exceed the requirement standards in the SWO FMP.

VIII. WILDLIFE AND T&E SPECIES CONSIDERATIONS:

Northern Spotted Owl: The SOA Wildlife Biologist has determined that the sale area may be suitable for Northern Spotted Owls due to the age and size of the trees. Surveys for NSO’s have taken place in this area for several years. As a result of these surveys the nest sites have been identified, and 1 active northern spotted owl site has been identified within 1.3 miles of this sale.

A biological assessment will be prepared by the ODF SOA Biologist to assure that the appropriate measures are taken to provide sufficient habitat on the landscape consistent with ODF’s policy on Northern Spotted Owls. Seasonal restrictions may be necessary to prevent disturbance during the nesting season.

Marbled Murrelet: This sale is outside the known inland range of the marbled murrelet and will not require surveys.

Threatened and Endangered Fish: There are no fish-bearing streams in the sale area. Most of the streams are seasonal tributaries that eventually flow into Windy Creek. Streams will be buffered according to the SWO FMP. Roads will be protected by best management practices (BMP’s) as outlined in the Forest Practices Act, ODF Roads Manual and the Management Plan. For additional protection measures to prevent sediment from entering perennial streams see Section VI – Harvesting and Access

Considerations, Section VII – Aquatic Resources and Water Quality, and Section IX – Slope Stability and Geotechnical Issues.

Threatened and Endangered Plants: The sale area was checked against district knowledge for any listed plant location as well as the Oregon Natural Heritage Program (ONHP) database of known listed plant locations. No records were found.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

Average slopes in this sale are about 30-50%. Some areas of the sale approach 70%. Road building best management practices will reduce soil disturbance. The road-building in area 1 and 5 is new road construction. Most of this road is on slopes of 30-60% which do not pose difficult road construction or slope stability issues. The most challenging road building will be in the draw at the top of area 1. This road has been designed by a roads engineer and geotechnical specialist to maintain slope stability and drainage.

X. RECREATION RESOURCES:

There are no developed trails or facilities in close proximity to the sale.

XI. CULTURAL RESOURCES:

A pre-sale reconnaissance revealed no cultural resources in the sale area.

XII. SCENIC RESOURCES:

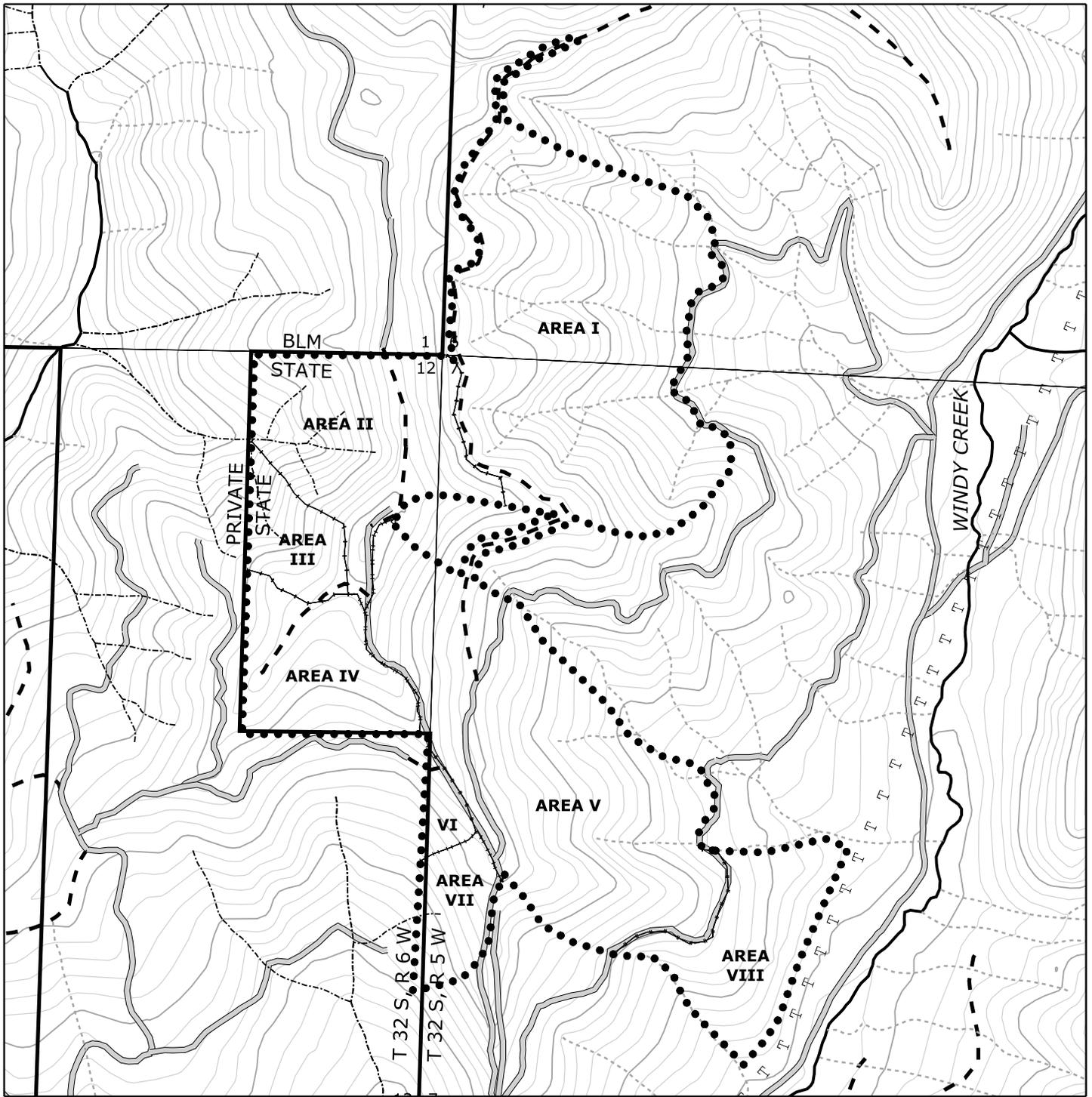
The Visual Classification is rated as Level III – Low Sensitivity.

XIII. OTHER RESOURCE CONSIDERATIONS:

There are no other resource considerations within or adjacent to the sale area.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

The sale has small perennial and seasonal streams that receive “focused” or “special stewardship”. The stream types will be verified on the ground during the sale layout process. Small perennial streams receive special stewardship or specific stream buffer protection in the stream bank zone. The inner and outer RMA zones of the perennial streams receive focused stewardship. Small seasonal streams receive focused stewardship in the inner and outer RMA zones where a specified basal area retention is required.



- Sale Boundary
- ++++ Area Boundary
- ▭ State Ownership
- ▭ Ownership Boundary
- Existing Road
- - - Planned Road
- T T T Transmission Line
- Streams
- Fish
- No Fish
- Unknown

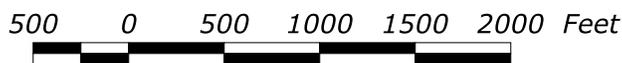
West Windy Thin

S.W.O. District - 2008
Annual Operations Plan



ACRES (est. gross)
TOTAL : 289 acres

T. 32 S., R. 5 W., Sec. 7; W.M.
Douglas County, Oregon



Contour Interval : 40 feet

SWO - Pre-Operations Report
June 12, 2007

MEMORANDUM

TO: Chris Rudd
FROM: Randy Smith
SUBJECT: Preliminary Biological Assessment for the **West Windy Thin** Timber Sale
DATE: February 12, 2007

Executive Summary

West Windy Thin is a proposed sale in the 2008 Annual Operations Plan of the Southwest Oregon District and is located within the home range of the JBL northern spotted owl site.

Under ODF's draft pilot project for managing for spotted owls in Southwest Oregon, a 500 acre core use area was designated around the JBL spotted owl site. The sale does not impact the 500 acre core use area.

After harvest of the sale, 77% suitable habitat will remain post harvest within 1.3 mile circle for the JBL NSO site. Habitat will exceed the ITG.

This sale is outside of the known inland range of the marbled murrelet (>50 miles from the ocean). As currently proposed, the West Windy Thin timber sale is expected to have a low risk of negatively affecting the occupancy and productivity of the JBL northern spotted owl site.

Introduction

Purpose

The Southwest Oregon District is proposing the West Windy Thin timber sale in their 2008 Annual Operations Plan. This sale area contains suitable habitat for northern spotted owls. Portions of the sale are within the 1.3 mile circle for the JBL northern spotted owl activity center. This memo presents the relevant biological information needed to assess the potential effects of the West Windy Thin timber sale on northern spotted owls.

Policy Direction

Northern Spotted Owls

ODF is implementing a draft pilot project in Southwest Oregon to investigate alternative strategies for managing northern spotted owls (ODF 2007). The West Windy Thin sale is part of this pilot project. Under this draft pilot project the following standards are being applied:

- a 500 acre core use area of the best available contiguous habitat around the activity center has been designated
- a minimum of 40 percent suitable habitat is maintained within a 1.3 mile radius home range circle
- Prescriptions designed to be consistent with the description of optimal foraging habitat, described under "Assumptions: Defining Suitable Spotted Owl Habitat" below, are considered to maintain stands as suitable foraging habitat.

Additional factors to be considered and documented in this biological assessment include proximity of the operation to a site, the prescription proposed, the size of the operation, the history of management activity near the site, and other relevant factors.

ODF is continuing to work with USFWS on this draft pilot project and will be monitoring to evaluate success at meeting objectives.

Background

Survey History and Site Information

JBL

Potential spotted owl habitat surrounding the timber sale was surveyed according to protocol endorsed by the USFWS (Anonymous, 1991). This site has been monitored by ODF contract crews and BLM since

it was established in 1990. A pair was located at this site in 1990. Successful nesting was documented in 1990 (2 fledged), 1996 (1 fledged), 1997 (2 fledged), 1999 (1 fledged) and 2002 (1 fledged). A nesting attempt occurred in 1991 with the remainder of the years being non-nesting (Kingfisher, 2006). Since the site was established, there have been 5 different males and 3 different females identified at this site. This activity center (AC) is approximately 0.4 miles from the West Windy Thin timber sale.

Sale Area Information

According to Stand Level Inventory (SLI) information from 2003, the West Windy Thin sale consists of 289 gross acres in 8 sale areas. Detailed information for each sale area is provided in Table 1.

The sale is comprised of 48-88 year-old Douglas-fir with minor amounts of grand fir, sugar pine, incense cedar, Pacific madrone and golden chinquapin. The average stand diameter throughout the sale areas is 12-14 inches with high stand density index (SDI) at 50-85% of maximum stand density. The primary understory vegetation for all sale area is salal, dwarf Oregon grape, vine maple, oceanspray and hazel. SLI reports good numbers of older conifer and hardwood snags greater than 24 inches in all sale areas (range 1-7 snags per acre) but the majority of snags are in older decay classes. Existing down wood in all sale areas ranges from 2000 to 8800 cubic feet per acre (all decay classes). The entire sale is considered suitable habitat for northern spotted owls. Portions of sale areas 1-4 are within the 1.3 mile circle and all of sale areas 5-8 are within the 1.3 mile circle for the JBL site.

Prescription

This sale area will feature various thinning prescriptions, snag creation, patch cuts, and regeneration harvest. The thinning prescriptions will be basal area thinning from below to remove the suppressed, intermediate and some of the co-dominant trees from these stands. Table 1 provides more details about the specific prescriptions for each area. There will be light thinning in areas 1, 2, 5 and 6, and a heavy thinning in area 4. Area 7 will have a modified clear cut with GTR on the edge, and area 8 will have a modified clear cut with scattered and/or clumped green trees. No commercial harvest will take place in area 3; however, snags will be created.

In areas 1-6, some of the healthy advanced understory, including hardwoods, will be reserved to promote layering and an upper diameter limit will be established to preserve the largest and healthiest trees in the stands. Thinning will increase the health and vigor of the residual conifer and hardwood trees as well as reduce the likelihood of insects, disease, wildfire, or other stand replacing events. Approximately 5% of the sale areas will remain in unthinned patches at least 1 acre in size. These unthinned patches will be randomly placed throughout the sale areas. Opportunities to create ¼ to 1 acre patch cuts mimicking natural disturbance processes of older forest stands will be explored in areas 1 and 5. An estimated 1 to 1.5 snags per acre will occur as a result of logging and natural mortality and, in addition, approximately 1 snag per 2 acres will be created by topping or girdling throughout the sale areas. Existing down wood will be retained and approximately 100 cubic feet/acre of class 1 wood will be added through normal harvest operations. Regeneration from seed will occur naturally as a result of the thinning, especially in group selection areas. Some group selection areas and the clear cut areas will be planted with a species mix present in the area.

Area 1 is a light thinning from below of the intermediate size classes of this younger conifer stand. Opportunities for group selection patch cuts of ¼ to 1 acre in size will be explored during sale layout. Existing down wood (5,000 cubic ft/acre) and large snags primarily composed of Douglas-fir, cedar and hardwoods that are not safety hazards will be retained.

Area 2 is a light thinning from below of Douglas-fir and some of the hardwoods removing smaller trees and ladder fuels. A goal of the light thinning in this area is to retain suitable NSO foraging habitat with a minimum canopy closure of 50-60% while reducing fuel loading lowering the risk of a stand replacement fire. Existing snags and down wood volume estimated at 2,000 cubic feet/acre will be retained.

The only operation in the 11 acres of area 3 will be hard conifer snag creation. This currently suitable habitat mixed species stand will retain the existing conifer BA of 180 and 230 TPA as well as >60% canopy closure. Down wood volume is approximately 2,000 cubic feet/acre. There are approximately 8-10 snags per acre predominantly in older decay classes with a large hardwood component.

Area 4 will involve a heavy thinning of this dense stand to develop understory and a future layered stand. The large amount of down wood (8,800 cubic feet/acre) will be retained as well as the 17 conifer snags/acre well distributed in all decay classes.

Area 5 will be a light thinning of conifer and hardwoods along with ¼ to 1 acre group selection patch cuts. Group selection areas will likely be centered on the few existing sugar pine trees in order to reduce nutrient and moisture competition. A goal of the light thinning in this area is to retain suitable NSO foraging habitat with a minimum canopy closure of 50-60% while reducing fuel loading lowering the risk of a stand replacement fire. Existing down wood in this area is approximately 3,800 cubic feet/acre along with 10-12 conifer snags/acre.

Area 6 will be a 4 acre light thinning to remove small suppressed conifer and hardwood trees and ladder fuels and to accelerate the stand growth towards OFS. A goal of the light thinning in this area is to retain suitable NSO foraging habitat with a minimum canopy closure of 50-60% while reducing fuel loading lowering the risk of a stand replacement fire. Existing down wood in this area is the same as area 5 with 3,800 cubic feet/acre along with 10-12 conifer snags/acre.

Areas 7 & 8 are composed of 11 and 24 acres of modified clear cut of relatively dense, homogeneous, small diameter Douglas fir with small crowns. The largest and most vigorous green trees will be retained in patches and along the perimeter of these sale areas for a total of 7-10 leave trees per acre. Leave trees will also include hardwood and minor conifer species. Snags will be created by topping or girdling selected leave trees in order to reach the goal of 2 hard snags/acre.

Assumptions

Defining the Home Range

We do not have specific information about the home range of the northern spotted owl site affecting this thinning sale. According to "Procedures leading to Endangered Species Act compliance for the northern spotted owl" (U.S. Fish and Wildlife Service 1990), the median home range size for spotted owl pairs in the Klamath Province is 3,340 acres, or the equivalent of the area encompassed by a circle with a radius of 1.3 miles. Although spotted owls generally do not have circular home ranges, in the absence of more specific information about the home range of this site, I will assume that a 1.3 mile radius circle around the nest or activity center approximates the home range of this site. All stands for this analysis were digitized and circle radii/acreages were calculated using ArcView software.

Defining Core Use Area

The draft pilot project in Southwest Oregon is implementing alternative protection measures for spotted owls. One component of the pilot project involves creation of a 500 acre core use area. Within the 500 acre core use area, management within the best 250 acres is deferred, and in the remaining 250 acres, operations are designed to maintain habitat suitability and promote development of improved habitat. The 500 acre core use area is established by incorporating the best, contiguous habitat surrounding known owl observations and nest sites.

Defining Suitable Spotted Owl Habitat

Although spotted owl habitat has generally been described as old growth, spotted owls are known to use a variety of forest types in this part of the Oregon Klamath province. The home ranges of spotted owls in this region contain large percentages of stands in intermediate stages of stand development (Anthony and Wagner 1999). Spotted owls are known to nest in stands as young as 60-80 years old that have suitable structures on state forest lands in the Southwest Oregon District (approximately 40% of known nests on ODF lands in the District are in this age class) and to forage in even younger stands.

A complicating factor in identifying suitable spotted owl habitat on this District is the land ownership pattern. The area around the JBL spotted owl site includes lands managed by federal, state, private industrial and private non-industrial landowners. Because specific stand data on private and federal ownership was not available for our use, this assessment of habitat suitability within the JBL home range circle is based on aerial photos. Determination of habitat status within the owl circles was done by considering 2005 series air photos, 2006 field assessments, and owl use data.

There is one sale on state lands within the JBL home range circle that is in an ODF-approved sale plan. The Fortune Cookie timber sale is an approved sale in the 2006 operations plan that will moderately thin 132 acres of suitable habitat within 1.3 miles of the JBL spotted owl site. This sale does not impact the 0.7 mile circle or the newly designated 500 acre core activity area.

As part of the development of the draft pilot project for northern spotted owls in Southwest Oregon, USFWS provided the following information stand characteristics that are associated with spotted owl "optimal foraging habitat":

- Multiple species are present
- Conifer basal area of 160 – 250 sq. ft./acre
- Minimum canopy closure of 50 – 60%
- At least 4 conifer trees per acre that are ≥ 24 " DBH
- Snags and downed wood approximating Late Successional Reserve Assessment targets:
 - 3 – 5 snags/acre
 - 10 tons downed wood/acre that is ≥ 20 " diameter (large end)
 - 5 tons downed wood/acre that is ≥ 9 " diameter (large end)

For the purposes of the draft pilot project and this assessment, prescriptions designed to be consistent with these characteristics will be assumed to maintain the suitability of spotted owl habitat, and not to downgrade the suitability of spotted owl habitat. Prescriptions may temporarily degrade spotted owl habitat, but it is not expected that this would happen to the extent that owls would cease to use the habitat. Sale prescriptions will be evaluated in their own context based on many factors. Degrading several of these factors at once may downgrade habitat, but factors such as canopy closure have greater magnitude than the others.

Impact Assessment and Discussion

Landscape Analysis

The following discussion assesses the habitat situation within 1.3 miles of the JBL spotted owl activity center, as recommended by the ITG (Figure 1, Table 2). This sale does not impact the 500 acre core use area.

The West Windy Thin timber sale will clear cut and partial cut 180 acres within the 1.3 mile circle for the JBL spotted owl site. Based on the light thinning prescriptions in areas 2, 5 & 6 and the snag creation in area 3, 96 of the 180 sale acres within the 1.3 mile circle will be assumed to remain as suitable habitat post harvest. The remaining 84 sale acres (in sale areas 1, 4, 7 & 8) within the 1.3 mile circle will be assumed to become non-suitable habitat post harvest. A habitat analysis of the JBL spotted owl site indicates that there are approximately 2820 acres of suitable habitat within 1.3 miles of the activity center. If the 84 acres from sale areas 1, 4, 7, & 8 are excluded from the suitable habitat along with the 132 acres in the proposed Fortune Cookie timber sale and the 1 acre that will be removed due to road construction, then there will be 2603 acres (77%) of suitable habitat available within 1.3 miles of the activity center. Based on this preliminary habitat analysis, this site will maintain enough unmodified suitable habitat within the 1.3 mile circle after harvest to be consistent with the ITG.

Effects of the Prescription

The effects of thinning on spotted owl habitat are not well understood. Spotted owls are known to use stands that have been thinned for foraging and for nesting (Anthony et al. 2000; Tappeiner et al. 1999), and this research indicates that in the long term, thinning is a tool that can develop spotted owl habitat (Tappeiner et al. 1999). However, the short-term effects of thinning are less clear. In a case study of a thinning near an owl core area in Clatsop County, spotted owls displaced their foraging activity for at least a couple of years after the harvest (Anthony, et al. 2000). Other anecdotal evidence on state forest lands in this District indicates that on at least one occasion, spotted owls have used recently lightly thinned stands for nesting within two years of harvest.

The prescription for areas 2, 3, and 6 will retain sufficient habitat elements immediately post harvest to be consistent with the definition for optimal foraging habitat, and thus are assumed to maintain these areas as suitable foraging habitat. Although area 5 will have a conifer BA less than 160, the prescription for this stand is not expected to degrade the area to unsuitable habitat post harvest for the following

reasons: the total BA including hardwoods will be 160, there are multiple conifer species with an excess of 4 TPA >24" DBH; because of the density of hardwoods, the canopy closure is expected to be above 50%. All areas will be comprised of a mixed species stand, will retain larger conifers and conifer BA, retain a minimum canopy closure and retain or exceed minimums for snags and down wood. While the habitat may be somewhat degraded in the short term, I do not anticipate that it will be downgraded to the point it transitions from foraging habitat to non-habitat and should develop more rapidly into increasingly suitable habitat in the future.

Following completion of the light thinning in area 1, the heavy thinning in area 4, and the modified clear cut in areas 7 and 8, I do not anticipate these areas will be suitable northern spotted owl habitat for many years. I believe that the sparse understory vegetation, lack of sufficient larger conifer trees, lack of suitable basal area and reduced canopy closure will not provide suitable habitat for owls or prey species for a period of time after harvest operations have been completed.

Discussion

The JBL spotted owl site is 0.4 miles from the proposed West Windy Thin timber sale. No portion of the sale is within the designated 500 acre core activity area. Approximately 180 of the 289 gross sale acres are within the 1.3 mile circle. Of these acres, 84 will likely be non-suitable immediately post harvest. The JBL spotted owl activity center is on ODF ownership. Federally managed land makes up 33% of the area within 1.3 miles of the spotted owl activity center, 43% is managed by ODF and 24% is managed by other landowners. There is a patch of 250 contiguous acres of high quality habitat around the activity center on state and federal lands which likely serves as a core use area. Fragmentation to other portions of the home range does not appear to be an issue at this point in time. The remaining habitat on state and federal lands near the spotted owl activity center is of moderate quality and appears to provide ample foraging and roosting opportunities for spotted owls.

The habitat analysis of this site indicates that the ITG will be met within 1.3 miles of the activity center after harvest of the sale area.

Conclusions and Risk Assessment

Biological Risk

As currently proposed, the West Windy Thin sale is expected to have a low risk of negatively affecting the occupancy and productivity of the JBL spotted owl site. Although the sale is located relatively near to the spotted owl activity center, I believe the following factors minimize potential negative impacts:

- ◆ Habitat quality immediately surrounding the activity center is high along with good connectivity to habitat elsewhere within the circle;
- ◆ No portions of the sale are located within the 500 acre core activity area.
- ◆ A majority of the proposed sale prescription is a thinning that will retain habitat elements and enhance future development of habitat important to northern spotted owls.
- ◆ Approximately 77% of the 1.3 mile circle will remain as unmodified suitable habitat after harvest of the sale, exceeding the ITG;

Compliance with Policy

After completion of harvest operations associated with the West Windy Thin timber sale, the remaining suitable habitat within the JBL owl circle will exceed the standards identified in the U.S. Fish and Wildlife Service rescinded Incidental Take Guidelines.

Consultation

Tod Lum, District Wildlife Biologist with the Oregon Department of Fish and Wildlife, had no additional comments to the assessment.

Literature Cited

Anonymous. 1991. Protocol for surveying proposed management activities that may impact northern spotted owls. Revised – March 17, 1992. 15 pp.

Anthony, R.G., F.F. Wagner 1999. Reanalysis of northern spotted owl habitat use on the Miller Mountain study area. Report to the Bureau of Land Management, Medford District, October 1999. 71 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.

Glenn, E., and R. G. Anthony. 2000. Home Range and Habitat Use of Northern Spotted Owls on State Forest Lands in the Oregon Coast Range. Unpublished Final Report, Oregon Cooperative Fish and Wildlife Research Unit, Corvallis, OR. 114 pp.

Kingfisher Ecological, Inc. 2006. Northern Spotted Owl Surveys Oregon State Lands 2006 for Oregon Department of Forestry. 135 pp.

Oregon Department of Forestry. 2007. Draft Northern Spotted Owl Pilot Project for Southwest Oregon. State Forests Program Bulletin. February 2007. 2 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.

cc: Dan Thorpe
Rob Nall
Marcia Humes
Greg Kreimeyer
Tod Lum, ODFW Roseburg

Table 1. Stand Level Inventory information and prescription targets for the sale areas in the West Windy Thin timber sale.

Sale Area	Prescription	Gross Acres	Current Stand Structure	Species	Current BA Total/Conifer/HW	Post Harvest Target BA Total/Conifer/HW	Current Total TPA	Target Total TPA	Desired Future Condition
1	Light Thinning w/Group selection	96	UDS (CSC)	DF, GF, IC, WH, WF, PM, BM,GC	173/154/19	139/120/19	219	156	UDS
2	Light Thinning	37	LYR	DF, IC, SP, WF, LO, PM, GC	245/181/64	193/150/43	229	176	OFS
3	Snag Creation	11	LYR	DF, IC, SP, WF, LO, PM, GC	245/181/64	245/181/64	229	229	OFS
4	Heavy Thinning	23	CSC	DF, IC, WF, PM, GC	280/240/40	100/80/20	311	154	LYR
5	Light Thinning w/Group selection	83	UDS (CSC)	DF, IC, SP, WF, WH, PY, GC, PM, GC	220/151/69	160/115/45	310	232	OFS
6	Light Thinning	4	UDS	DF, IC, SP, WF, WH, PY, GC, PM, GC	220/151/69	185/145/40	310	260	OFS
7	Modified Clear cut	11	CSC	DF, GF, IC, PM, GC	217/204/13	35/30/5	333	12	CSC
8	Modified Clear cut	24	CSC	DF, GF, IC, PM, GC	217/204/13	35/30/5	333	12	CSC

Table 2. Acres of suitable habitat within the 1.3 mile circle of the JBL northern spotted owl activity center. Suitable habitat determined through 2005 air-photo analysis and 2006 field assessment.

	Acres	JBL
		1.3 mi
Suitable Habitat:		
State		1307
Federal		953
Private		560
Total		2820
Sale acres in circle removed as habitat	289	84
State acres in notification w/n circle (Fortune Cookie)		132
Acres removed due to road construction		1
Unmodified suitable habitat remaining		2603
% suitable post harvest		77%