

Pre-Operations Report

Operation Name: Rapid Stanley
County: Clatsop
Management Basin: Buster

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres
1	PC-H	37	35
2	PC-H	34	31
3	PC-M	54	47
4	PC-M	168	152
5	PC-M	200	192
Total	Partial Cut – Heavy	71	66
Total	Partial Cut - Moderate	422	391
Total	Partial Cut	493	457

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

The sale is located along gentle to moderate upper slopes of Stanley Creek, Walker Creek and un-named tributary of Buster Creek and the gentle ridge and upper slope dividing Buster Creek from North Fork Rock Creek. Areas 1, 2, and 3 are underlain by sedimentary rocks of the informal Jewel Member of the Keasey Formation and the informal Sunset Highway Member of the Hamlet Formation. Areas 4 and 5 are underlain by igneous rock of the Tillamook Volcanics Formation.

II. CURRENT STAND CONDITION:

Areas 1 and 2 – The current stands are 30 to 33 years old, and are composed of Douglas-fir mixed with some hemlock containing scattered clumps and stringers of alder. The stands are categorized as Closed Single Canopy (CSC) with a stand density ranging from 25 to 35. The understory consists primarily of sword fern, vinemapple, huckleberry, and salmonberry.

Areas 3, 4, and 5 – These stands range in age from 59 to 71 years old. These stands are composed of Douglas-fir and western hemlock with clumps and stringers of red alder. The stands are categorized as 74% CSC and 26% UDS with a stand density range of 42 to 82%. The understory consists primarily of sword fern, vinemapple, and salmonberry.

Table 2. Stand Inventory Information

Area	Prescription	Stand ID ¹	Species	Age	DBH	BA	TPA	SDI	Acres ²
1	PC - H	1946	DF	32	13	135	140	36	35
		Target ³	DF, RA		14	120-140	90	20-25	35
2	PC - H	1922	DF, RA	34	10	82	162	25	31
		Target ³	DF, RA		12	120-140	115	20-25	31
3	PC - M	24391	DF, RA	64	16	240	173	61	47
		Target ³	DF, RA		19	120-160	70	25-30	47
4	PC - M	2094	DF, WH	70	17	316	202	78	32
		2077	DF, WH	66	18	266	150	64	56
		2116	DF, WH	71	15	295	239	76	12
		2071	DF, WH	66	17	288	185	71	11
		2122	DF, WH	64	21	361	148	82	10
		24080	RA, DF	60	16	161	111	42	31
		Target ³	DF, WH		20	120-160	80	25-30	152
5	PC - M	2122	DF, WH	64	21	361	148	82	54
		2146	DF, WH	72	19	295	145	69	79
		2181	DF, WH	62	18	178	99	43	18
		2121	DF, WH	66	19	277	137	65	12
		2133	DF, WH	68	19	313	162	74	5
		24082	DF	60	18	294	165	73	24
		Target ³	DF, WH		21	130-170	80	30-35	192

1 The source of stand inventory information is from SLI 2005 and OSCUR 2002. Age shown as of 2006.

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

3 The Target identifies expected stand characteristics (DBH, BA, TPA and SDI) after harvesting has been completed.

III. DESIRED STAND CONDITION / VISION:

Areas 1 and 2 - The goal is to move these stands as quickly as possible towards their desired future condition of Older Forest Structure (OFS). This will be done with one heavy thinning entry followed most likely by maintenance thinning in approximately 15 to 20 years. The initial entry will retain as much existing structure as possible, including vinemapple, red alder, and any understory conifer.

Areas 3 and 4 - will be thinned to a level that will develop the existing CSC condition into an Understory (UDS) condition and assist in the development of the DFC of Layered (LYR) throughout these stands. A second partial cutting entry will likely be necessary in 15 to 20 years to keep the stands in a layered condition and keep the canopy closure from moving the stands to an understory structure.

Area 5 - will be thinned to a level that will enhance the existing understory and assist in the development of the DFC of Layered (LYR) throughout these stands. A lighter thinning approach will be taken in this stand as compared to Areas 3 and 4. Because of the lighter thinning a second partial cutting entry will likely be

necessary in 10 to 15 years to keep the stands in a layered condition and keep the canopy closure from moving the stands to an understory structure.

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest ¹	Desired Future	Acres
1	1946	CSC	UDS	OFS	35
2	1922	CSC	UDS	OFS	31
3	24391	UDS	LYR	LYR	47
4	2077	CSC	UDS	LYR	56
	2094	CSC	UDS	LYR	32
	2116	CSC	UDS	LYR	12
	2071	CSC	UDS	LYR	11
	2122	CSC	UDS	LYR	10
	24080	UDS	LYR	LYR	31
5	2146	CSC	UDS	LYR	79
	2122	CSC	UDS	LYR	54
	2181	CSC	UDS	LYR	18
	2121	CSC	UDS	LYR	12
	2133	CSC	UDS	LYR	5
	24082	UDS	LYR	LYR	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:

Areas 1 and 2- are young plantations within the proposed Jewell Owl Cluster that will be commercially thinned from below to a stand density index (SDI) of 20 to 25%. An effort will be made to retain all minor species, that is, all species except Douglas-fir. Douglas-fir to be thinned will include trees 8" dbh and greater. A top end diameter limit (~18"-20" dbh) will also be implemented. A few patch cuts, not to exceed two acres in size, may be implemented in both sale areas to create variability in the stand. The feasibility of underplanting in these areas will be evaluated with the Staff Silviculturist and Reforestation Unit Forester. Snags may be created out of some of the leave trees if it is safe to conduct while still leaving all the whorls below the topping point.

Portions of Area 1 are within the Strum Creek NSO home range. This area consists primarily of 31 year old timber. A biological assessment will be completed for this proposed operation. Under the "Agreement for the Conservation of Northern Spotted Owls," commonly referred to as the "Strum Creek Agreement," harvesting of stands less than age 40 that are within the Strum Creek NSO home range will only occur if the Department's biological assessment concludes that the logging will improve conditions for the owl, and the U.S. Fish and Wildlife Service does not object to the Department's

conclusions. It is highly unlikely that this sale area would be over 40 years old at the time of harvest.

Areas 3 and 4 - will be automark thinned to an approximate stand density range of 25 to 30%.

Area 5 - will be a slightly lighter automark thinning with a SDI goal of between 30 to 35%. In Area 5 alternative prescriptions will be implemented at the patch scale. These prescriptions could include patch cuts or no-harvest areas. To get to the desired stand structure of LYR may require additional thinning.

During all harvesting activities, all existing snags will be retained unless deemed to be safety hazards. Where fewer than 2 hard snags per acre are found to exist during sale layout, opportunities for snag creation or leaving additional live green trees will be implemented to supplement landscape snag levels (FMP, "Landscape Management Strategy 3c. Snags", pages 4-53 and 4-54).

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%	0%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Planned Quarter:		1 st	

	Conifer	Hardwood	Total
Net Volume (MBF)	7,000	0	7,000
Stumpage Value (\$/MBF)	\$350	\$300	
Estimated Gross Value	\$2,450,000	0	\$2,450,000
		Project Costs:	\$351,000
		Estimated Net Value:	\$2,099,000

VI. HARVESTING AND ACCESS CONSIDERATIONS:

Access is Highway 103 to Buster Creek Mainline and Highway 202 to Wage Road. Sale access is secured through existing easements.

Approximately 2.6 miles of new road construction within the sale areas is planned. The planned haul routes are Nettle Creek Road, Grand Rapids Road, Wageland Road, Buster Creek Mainline, and Wage Road. New rocked roads will be designed for all season hauling, and will be maintained for public access after operations are completed. Dirt spurs will be designed for summer hauling and will be vacated after operations are completed. Approximately 5.5 miles of road improvement will be conducted. Approximately 12,500 cubic yards of rock crushing will be conducted at Nettle Quarry. Approximately 5,000 cubic yards of rock stockpiling will be conducted. Two Type F stream crossings will be

evaluated for vacating or culvert upgrades during sale layout. These crossings were identified as potential sites for management activities in Table 1 of the Upper Nehalem Watershed Project WIT Action Plan.

A combination of cable yarding systems and ground yarding will be planned for harvesting. Cable systems will be used on the steeper slopes. Ground yarding will generally be limited to slopes under 30%.

New road construction in Area 4 will cross Nettle Creek, a medium Type F stream. Written plans will be required for the Type F stream crossing and cable systems crossing Type F streams.

Table 5. Transportation Management Summary (Miles).

Activity	Mainline	Collector	Rocked Spur	Dirt Spur
Construct	0.0	1.1	1.2	0.3
Improve	0.0	5.5	0.0	0.0
Maintain	8.0	9.5	0.0	0.0
Close/Block	0.0	0.0	0.0	0.3
Vacate	0.0	0.0	0.0	0.0

VII. AQUATIC RESOURCES AND WATER QUALITY:

Type F Streams: Area 3 – Stanley Creek, a medium Type F stream, parallels the western boundary of Area 3 for approximately 4,200 feet. Area 4 - Nettle Creek, a medium Type F stream, runs through the northeastern portion of the area for approximately 1,800 feet. New road construction accessing Area 4 will cross this stream. A tributary of Nettle Creek runs parallel to the northeastern boundary for approximately 2,200 feet. Areas 1, 2, and 5 – No Type F streams are associated with the harvest activities. There are no known domestic water systems associated with this sale.

Type N Streams: There are small perennial Type N streams in all sale areas.

Stream Enhancement Opportunities: Preliminary sale review by ODFW Fish Habitat Biologist indicates that there are three options for stream enhancement projects associated with this sale. The first is placement of LWD where skyline cables pass over Rankin Creek adjacent to Area 2. The second is placement of LWD where skyline cables pass over Stanley Creek adjacent to Area 3. The third opportunity would be to place LWD with ground based equipment in Nettle Creek in Area 4. These management activities are aligned with the Upper Nehalem Watershed Project WIT Action Plan which determined that there was low recruitment of in-stream wood in Buster Creek. Further assessment and collaboration will be done with ODFW biologists and the Jewell Unit Forester.

Aquatic Resource Protection: All Areas are within the Buster Creek Salmon Anchor Habitat Area. These areas shall receive aquatic resource protection in accordance with the standards contained in the Northwest State Forest Management Plan, Implementation Plan, and SAH strategies.

In addition, all streams will be examined to determine stream type and classification during sale layout, and then the specific riparian management area strategies required in the FMP will be implemented. The FMP riparian management area strategies that will be implemented are found in the FMP, Appendix J, "Management Standards for Aquatic and Riparian Areas", pages J-1 through J-16.

Scheduled in-stream work will be conducted during in-stream periods established by ODFW.

VIII. T&E SPECIES CONSIDERATIONS:

Marbled murrelets surveys for all sale areas were conducted in 2005 and 2006 with no detections.

All sale areas were surveyed to protocol for northern spotted owl in 2005 and 2006 with no detections. A Preliminary Biological Assessment will be completed since a portion of Area 1 falls within the Strum Creek Northern Spotted Owl home range.

Thinning of Areas 1 and 2 is being done in order to keep them on a pathway toward OFS, ensuring that they will become suitable NSO habitat. This objective is aligned with the draft HCP cluster goal of "thinning in young plantations of non-suitable habitat (20 to 40 year old stands)" in an effort to accelerate the development of suitable habitat to "enhance the viability of all spotted owl sites within the cluster."

The sale area was checked against district knowledge for any listed plant locations. The sale area was also checked against the Oregon Natural Heritage Program (OHNP) database of known listed plant locations. No listed plant records were identified within the sale area.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

There are no high landslide hazard locations predicted in most of the timber sale. There are only steep slopes in the upper portion of Area 3 and along the west boundary of Area 4. The initial hazard and risk assessment from the geotechnical specialist is low except for Area 4 which is moderate. The geotechnical specialist will only be consulted during sale layout if concerns arise. The geotechnical specialist will be consulted during the layout of Area 3 unless the boundary changes eliminate the area of steep slope.

X. RECREATION RESOURCES:

This area receives little use, most likely hunting and dispersed camping. The Clatsop State Forest Recreation Plan does not list any specific activities for this portion of the basin.

XI. CULTURAL RESOURCES:

No known cultural resources are within or adjacent to the operation.

XII. SCENIC RESOURCES:

The sale area is in a landscape of low visual sensitivity (Level 3).

XIII. OTHER RESOURCE CONSIDERATIONS:

The east boundary line of Area 1 comes within approximately 200 feet of private land. Field verification of this line is recommended. The property corner in the NW ¼ of the NE ¼ of Section 19 will need to be protected.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

All of Areas 1 and 2 are located within the Buster Creek Salmon Anchor Habitat Area and within the Jewell Northern Spotted Owl Cluster. These areas will be managed as per the Northwest Management plan for these areas. Twenty-three acres of Area 1 is within the female Strum Creek Northern Spotted Owl home range. See Section IV, Proposed Management Prescriptions, for the management guidelines to be utilized.

Areas 3 and 4 have 54 and 176 acres, respectively, that fall within the Buster Creek Salmon Anchor Habitat Area. Area 5 Wildlife Habitat applies to Salmon Anchor Habitat Areas, of which 117 acres is within the Buster Creek Area and 82 acres within the Upper Rock Creek Area. All other acres in Areas 1, 2, 3, 4, and 5 are classified as "general management." See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.

Boundary lines depicted on Attachment C are approximate; exact locations and site specific management activities will be determined during the sale preparation process

FY 2008

RAPID STANLEY

Portions of Sections 16, 18,
19, 21, 28-32 of T5N, R6W, W.M.,
Clatsop County, Oregon

Approximate Net Acreages:

	MC Acres	PC Acres
Area 1 (PC) -		35
Area 2 (PC) -		31
Area 3 (PC) -		54
Area 4 (PC) -		152
Area 5 (PC) -		192
Total Acres by Prescription =	457	
Total Sale =	457	Acres

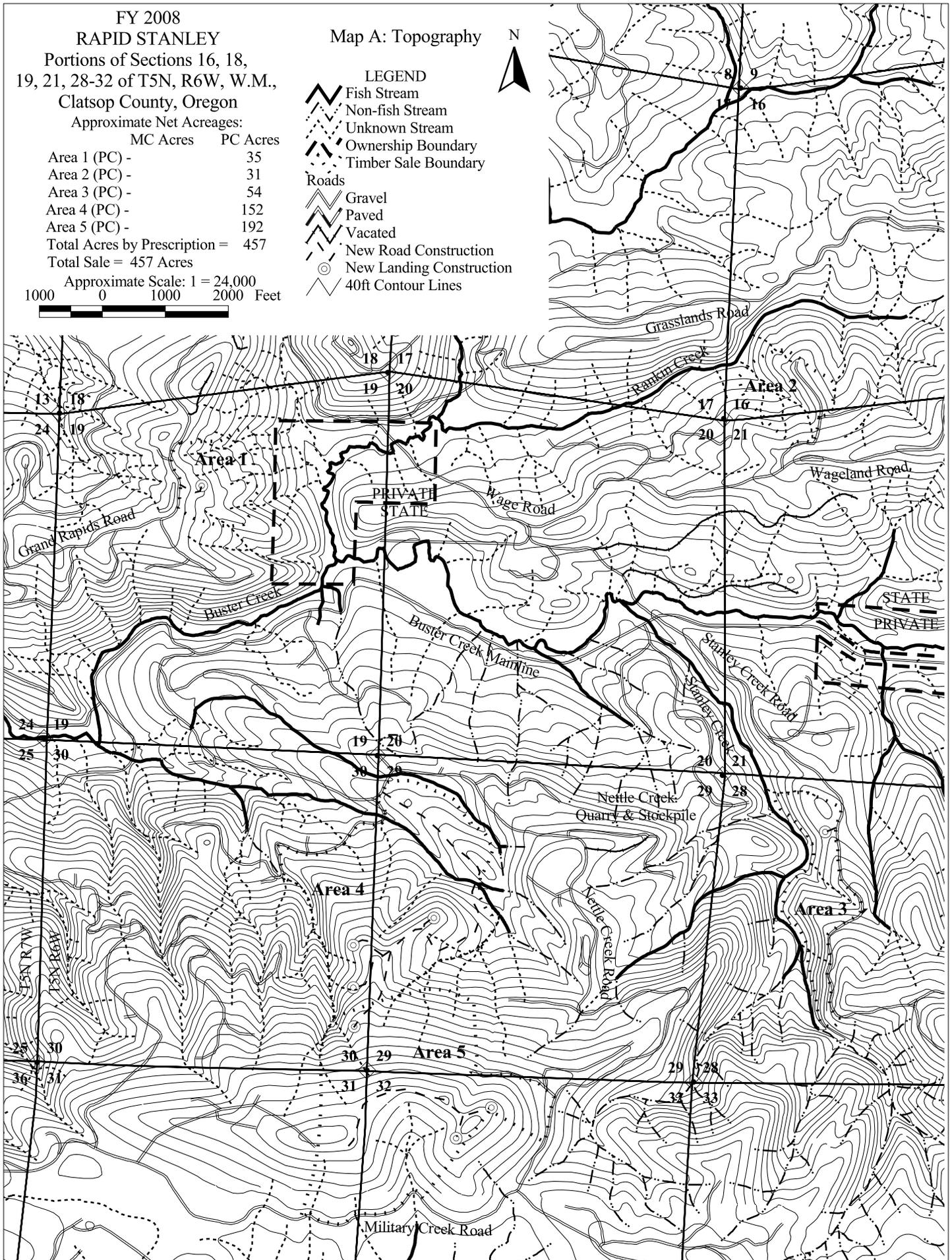
Approximate Scale: 1 = 24,000



Map A: Topography



- LEGEND**
- Fish Stream
 - Non-fish Stream
 - Unknown Stream
 - Ownership Boundary
 - Timber Sale Boundary
 - Roads**
 - Gravel
 - Paved
 - Vacated
 - New Road Construction
 - New Landing Construction
 - 40ft Contour Lines



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 Portions of Sections 16, 18,
 19, 21, 28-32 of T5N, R6W, W.M.,
 Clatsop County, Oregon

Approximate Net Acreages:

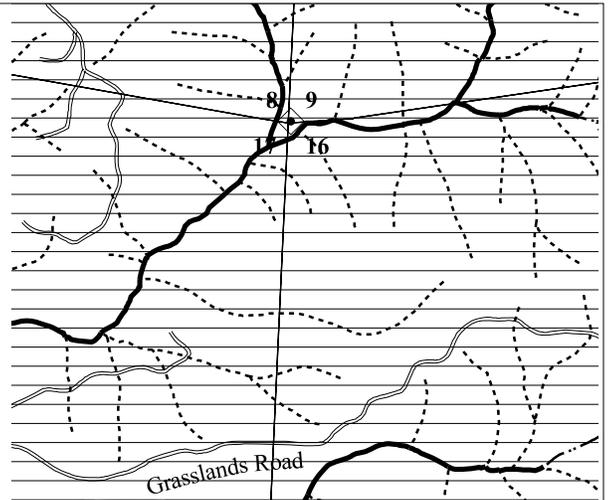
	MC Acres	PC Acres
Area 1 (PC) -		35
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Area 4 (PC) -		152
Area 5 (PC) -		192
Total Acres by Prescription =	457	
Total Sale =	457	Acres

Approximate Scale: 1 = 24,000



Map B: Desired Future Conditions

- LEGEND**
- Fish Stream
 - Non-fish Stream
 - Unknown Stream
 - Ownership Boundary
 - Timber Sale Boundary
 - Roads**
 - Gravel
 - Paved
 - Vacated
 - New Road Construction
 - New Landing Construction
 - Desired Future Condition**
 - Layered
 - Older Forest Structure



FY 2008

RAPID STANLEY

Portions of Sections 16, 18,
19, 21, 28-32 of T5N, R6W, W.M.,
Clatsop County, Oregon

Approximate Net Acreages:

	MC Acres	PC Acres
Area 1 (PC) -		35
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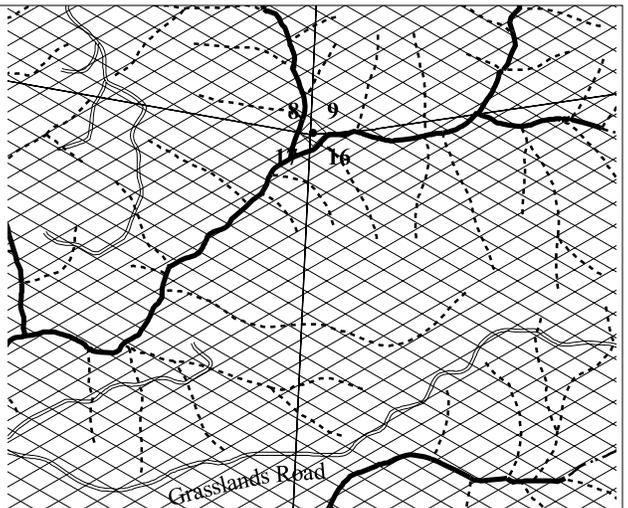
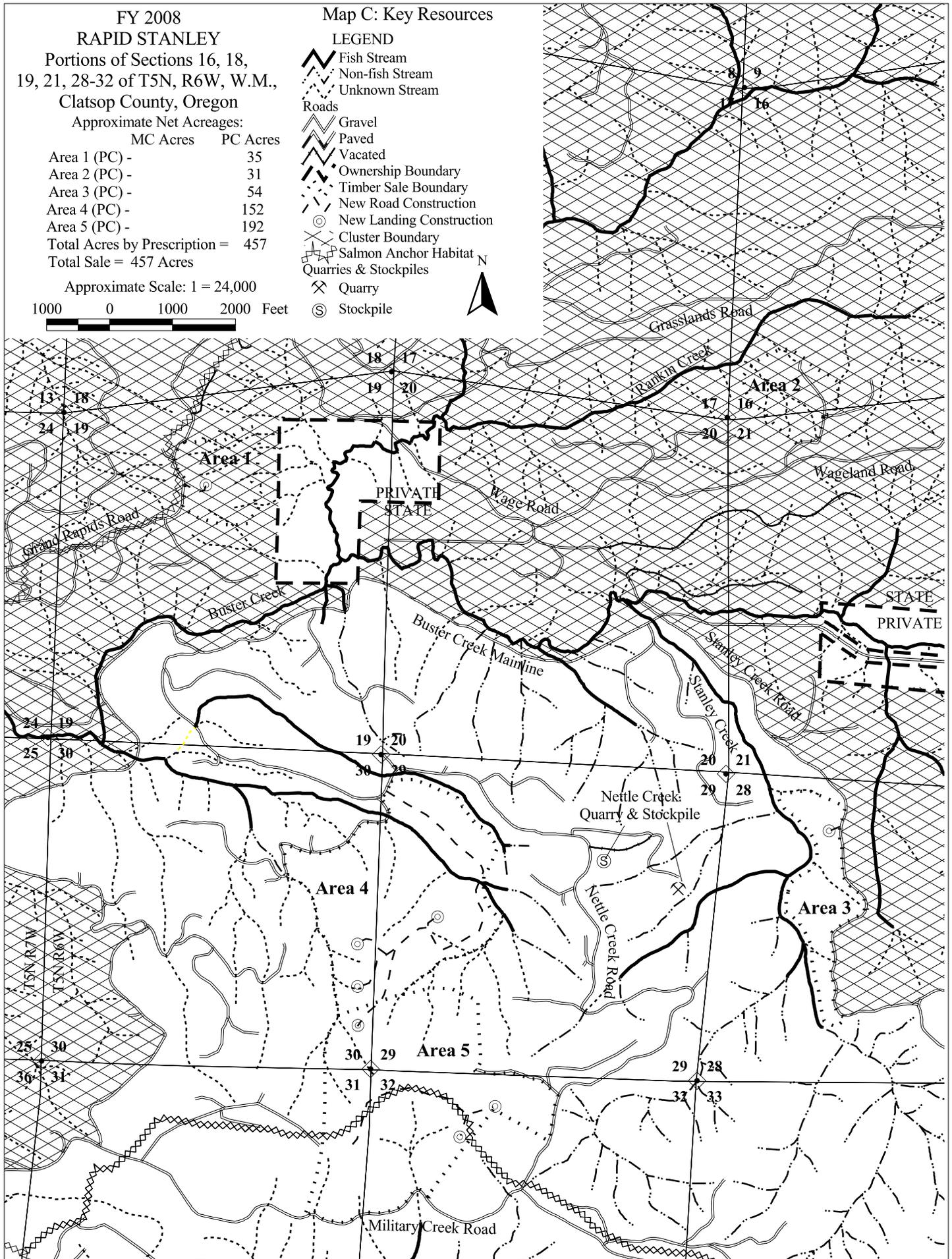
Approximate Scale: 1 = 24,000



Map C: Key Resources

LEGEND

- Fish Stream
- Non-fish Stream
- Unknown Stream
- Roads**
- Gravel
- Paved
- Vacated
- Ownership Boundary
- Timber Sale Boundary
- New Road Construction
- New Landing Construction
- Cluster Boundary
- Salmon Anchor Habitat
- Quarries & Stockpiles
- Quarry
- Stockpile



Preliminary Biological Assessment of the Proposed Rapid Stanley Thinning Timber Sale: Potential Impacts to the Strum Creek Northern Spotted Owl Site

Prepared by: Clint Smith

Date: 28 December 2005

INTRODUCTION

Purpose

A portion (23 of 37 gross sale acres within Area 1; 23 of 489 gross acres of the total sale) of Area 1 of Astoria District's proposed Rapid Stanley timber sale (FY 2007 Alternate) is located within the home range (as determined by radio-telemetry) of the Strum Creek female northern spotted owl. This sale area is located approximately 2 miles south-southwest of the Strum Creek Activity Center (A.C.).

The purpose of this Biological Assessment (BA) is to summarize relevant biological information and the habitat conditions within this home range and within Area 1 of Rapid Stanley. I will discuss the potential biological risks of proceeding with this activity. I also will discuss implications with regards to the "Agreement for the Conservation of Northern Spotted Owls" between the Oregon Department of Forestry (ODF) and the U.S. Fish & Wildlife Service (USFWS) dated 5 September 2001 (Agreement).

Area 2 of this sale is located adjacent to, but not within, a portion of the Strum Creek male home range, so a BA is not required for Area 2.

Policy Direction

Agreement for the Conservation of Northern Spotted Owls. On 5 September 2001, ODF signed an "Agreement for the Conservation of Northern Spotted Owls" with the U.S. Fish & Wildlife Service. Requirements of this Agreement relevant to this Biological Assessment include:

- "The Department agrees to protect the home ranges of the Strum Creek owls as defined by the 95% fixed kernel boundaries derived from a Department sponsored telemetry study."
- "The Department agrees not to log or authorize others to log on current and future state lands in stands older than 40 years old in this home range."
- "For stands on state lands less than 40 years old within the Strum Creek Home Range, logging will only occur if the Department's biological assessment concludes that the logging will improve conditions for the owl, and the Service does not object to the Department's conclusions within 60 calendar days of receiving the biological assessment."
- "Suitable northern spotted owl habitat is defined for purposes of this Agreement as low, medium and high quality habitat the Department identified as suitable owl habitat in its 1998 mapping of State Forest lands (Exhibit 3 in the Agreement), provided the area in question has not been logged since the mapping." (Note: Although the Agreement defines suitable habitat slightly differently, Exhibit 3 has been updated using 2002 grow forward OSCUR data and using the following criteria (Mike Wilson, ODF, pers. comm.):
 - Non-habitat <12" DBH
 - Low Quality Habitat 12-17" DBH
 - Medium Quality Habitat 18-25" DBH
 - High Quality Habitat 26"+ DBH)

BACKGROUND

Survey History

The following summarizes the history of spotted owl surveys in the vicinity of the Strum Creek site:

- 1991: Pair status established
- 1992: Pair present
- 1993: Pair present
- 1994: Pair nested; juvenile lost to predation. New female banded.
- 1995: Pair present. Radio transmitter placed on the male in June, and again in September after he had molted.
- 1996: Pair nested about 0.5 mile from the 1994 nest tree and fledged two young.
- 1997: Nested in a different tree, about 200 meters from the 1996 nest; fledged two young. Female was radio-tagged for about 3 months in 1997-98 before she molted.
- 1998: Pair present.
- 1999: Nesting attempt in 1996 nest tree failed.
- 2000: Nesting attempt >0.5 miles SSW of the historic nest grove; failed.
- 2001: Historic female found in core area on 2 occasions. She also was observed at the Tidewater site, several miles to the northwest.
- 2002: Historic female found in the core area once during the day.
- 2003: No responses at Strum Creek. Multiple female spotted owl responses were observed at the Tidewater site in 2002 and 2003, but the bird was never identified; so we do not know whether or not it was the Strum Creek female.
- 2004: No responses at either Strum Creek or Tidewater.
- 2005: No responses at either Strum Creek or Tidewater.

After the 2005 survey season, this site is classified as 'Historic' status after three years of vacancy. The male has not been observed since 2000 and the female has not been observed at this site since 2002 (Kingfisher 2005); however, the 'Agreement' still requires protection of the Strum Creek home ranges.

Sale Area Information

According to ODF's OSCUR timber inventory database (Stand02), Area 1 is located in a 28 year-old stand (31 years in 2005) and averages 13 inches DBH. According to Astoria District's draft pre-operations report, the stand is composed of Douglas-fir mixed with some hemlock and scattered clumps and stringers of alder. Stand density ranges from 25 to 35, and the understory consists primarily of sword fern, vine maple, huckleberry, and salmonberry. In my opinion, this stand looks like a typical 30 year-old plantation within this landscape.

Prescription

Astoria District's draft pre-operations report states that Area 1 is a young plantation "within the Jewell Owl Cluster that will be commercially thinned from below to a stand density index (SDI) of 20 to 25%. An effort will be made to retain all minor species, that is, all species except Douglas-fir. Douglas-fir to be thinned include trees 8" dbh and greater. A top end diameter limit (~18"-20" dbh) will also be implemented. A few patch cuts, not to exceed two acres in size, may be implemented in ...(the)...sale area...to create variability in the stand. The feasibility of underplanting in...(this)...area...will be evaluated with the Staff Silviculturist and Reforestation Unit Forester. Snags may be created out of some of the leave trees if it is safe to conduct while still leaving all the whorls below the topping point."

ASSUMPTIONS

Defining the home range

As directed by the Agreement, this assessment will analyze habitat within the home range (95% kernel as determined by radio telemetry) of the Strum Creek female.

Defining Suitable Habitat

In this BA, I have considered suitable habitat on ODF ownership to be all stands greater than or equal to 12" DBH, except those stands that were determined from photo interpretation and/or ground truthing, as described in a following section, to be unsuitable.

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 12-13 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 smaller 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 on non-ODF Ownership. This assessment presents an evaluation of habitat suitability on non-ODF ownership within the spotted owl home ranges. I conducted the majority of this evaluation with Ty Williams, using recent stereo aerial photographs and Ty's knowledge of the landscape and recent harvest activities. The habitat determinations were relatively straightforward, and we did not believe that ground-truthing was necessary. The standard for habitat suitability was the same as the standard I use for recommending spotted owl surveys: "If ODF were proposing a timber sale in a comparable stand, would I recommend spotted owl surveys?" Jenny Laughman has helped me to identify recent private harvest units within the home range based upon Forest Practices notifications.

Evaluation of Habitat on ODF Ownership. As directed by current policy (State Forests Program Spotted Owl Strategies for Annual Operation Plan Development, General File # 3-2-1-333.1), I have conducted a site-specific evaluation of habitat suitability on the 11-17" DBH stands on ODF ownership. I conducted the majority of this assessment with Ty Williams using recent stereo aerial photographs and Ty's knowledge of the landscape. We ground truthed a limited number of stands that, from aerial photo interpretation, appeared to be denser and simpler than most of the 12-17" DBH stands within the owl home ranges. The standard for habitat suitability was the same as that used for the private ownership analysis: "If ODF were proposing a timber sale in a comparable stand, would I recommend spotted owl surveys?"

Our intent in this exercise was to categorize stands by OSCUR type, not to re-draw types. So, stands where 'suitable habitat' predominated within the OSCUR type were classified as 'suitable', and the stands where non-suitable habitat predominated was classified as 'non-suitable'. The majority of the 12-17" stands within this landscape are characterized by relatively high amounts of horizontal diversity. There are many patches of small, simple Douglas-fir that on their own might be classified as 'non-suitable'. However, within most of the types, there also are scattered hardwood patches and stringers, patches of wider spaced trees. A few types also contained some patches of large, residual trees. These stands were classified as 'suitable', although various sized patches of 'non-suitable' habitat were scattered throughout many of the types.

The stands that were not considered suitable spotted owl habitat were young plantations with high tree densities and low stand diversity. All ODF types that were classified as 'non-suitable' were within types that are < 40 years old, according to Stand02.

All stands were digitized and acreages were calculated using ArcView.

If you study Figure 1, you will notice that many stands classified as 'non-suitable' habitat, even stands that average <12" DBH, have spotted owl observations and radio-telemetry locations within them. Reasons for these observations could include: observations are on the edge of stands classified as 'suitable' habitat, and the observations likely are associated with the 'suitable' stands; the result of large error ellipses, again associated with adjacent 'suitable' stands; birds using 'suitable' micro-sites within stands where 'non-suitable' habitat prevails; birds passing through 'non-suitable' stands on their way to 'suitable' habitat. So with the exception of clearcuts and very young and dense plantations, many stands classified as 'non-suitable' habitat do not present a 'wall' to spotted owl passage. Rather, they represent stand structure types that usually would not support a spotted owl site unless there were abundant stands of higher quality habitat available on the landscape.

IMPACT ASSESSMENT AND DISCUSSION

Landscape Analysis

Landscape Condition. Figure 1 shows the spotted owl activity center, home range, spotted owl observations, timber sale location, and average stand ages and diameters (based on ODF's OSCUR timber inventory database – Stand02) on ODF ownership, within the Strum Creek female home range. This figure also shows the 12-17" DBH OSCUR types that I classified as 'non-suitable.'

Tables 1-3 summarize stand DBH and ages on ODF ownership, and private habitat classifications within the Strum Creek female home range.

Cumulative Impacts. There are three sales (Walker Ridge Stand Improvement, Tideport clearcut harvest, and Crawford Ridge Thinning) within the Strum Creek female home range that have been harvested since 1998. In addition, one sale (Grasslands Thinning) is included in an approved annual operations plan and is partially located within this home range. I finalized the preliminary BA for Grasslands Thinning in January 2005. Figure 1 and Tables 1-3 also summarize some older clearcut harvests that have occurred in this landscape.

Several new clearcut harvest units are present on the private forest lands within the Strum Creek female home range. This represents the best available information to date on harvest of private lands in the owl circle. I am not able to anticipate if, when, or where additional harvests may occur on private ownerships.

Anticipated Impacts of the Harvest Prescription

Short-term. I have classified the portion of the sale within the Strum Creek female home range as ‘non-suitable’ habitat for spotted owls. So, I anticipate that implementing the harvest prescription will not render suitable habitat unusable for spotted owls. A lighter intensity thinning within marginal/non-habitat of this structure might actually have a short-term beneficial effect; I have observed this on at least one occasion (Gawley Creek Thin in Cascades District). The relatively heavy thinning prescribed for this unit likely will take longer to function as suitable spotted owl habitat, but may have an increased long-term benefit in overall habitat quality. I anticipate that harvest of this Rapid Stanley unit will not have a great impact on the way spotted owls utilize this landscape.

Long-Term. In my opinion, the planned harvest prescription is a sound way to move the stands toward the desired future condition of Layered and Older Forest Structure. Therefore, I believe that the long-term effects of the prescription will be to accelerate the development of higher quality spotted owl habitat within these stands.

Discussion

Two age and size classes predominate within the landscapes surrounding the Strum Creek spotted owl female home range: naturally regenerated stands aged about 55-69 years old and averaging 12-25” DBH, and plantations aged <40 years old and averaging approximately 0-14” DBH.

Within the Strum Creek female home range (40% of 7845 acres is 3138 acres), contribution of habitat on non-ODF ownership is necessary to reach the 40% habitat level (Table 1-2).

As a supplement to the stand diameter information, Table 3 provides information on stand ages within the Strum Creek female home range. If we assume that recently harvested areas don't provide suitable habitat, we must assume that stands as young as the 50-59 year old age class are ‘suitable’ and that at least 496 acres of private ownership contributes toward ‘suitable’ habitat to conclude that 40% of the home range contains ‘suitable’ habitat (Table 3).

CONCLUSIONS AND RISK ASSESSMENT

Biological Risk

A portion of Area 1 of the proposed Rapid Stanley timber sale is located along the outer edge of the Strum Creek female northern spotted owl home range. This sale is located beyond 0.7 miles from both of these owl sites, and will not impact any core use areas.

The sale is located largely outside of and on the extreme outer edge of the home range. Although average stand DBH is >11", I have classified habitat quality within Area 1 as ‘non-suitable.’

The sale prescription is designed to accelerate development of Layered and Older Forest Structure conditions within the sale areas, which should improve spotted owl habitat quality over the long term.

I anticipate that harvest of this sale will pose a ‘Low’ risk to the Strum Creek northern spotted owl site.

Compliance with the ‘Agreement for the Conservation of Northern Spotted Owls’

A portions of Area 1 is within the Strum Creek female home range. Within this home range, sale DBH is 13” (according to Stand02), and age was 28 in 2002, which would be up to 31 years in 2007. So, I believe that harvest of Rapid Stanley would be in compliance with the ‘Agreement.’

The ‘Agreement’ prohibits logging of stands “older than 40 years old” within the Strum Creek home ranges, and allows logging of stands “less than 40 years old” under certain conditions. The Agreement does not specify whether or not logging of stands exactly 40 years old would be allowed. So, if the portions of the sale within the Strum Creek home ranges are logged in or after 2015, and possibly in 2014, a modification is needed to avoid violation of the ‘Agreement.’

CONSULTATION WITH ODFW

Herman Biederbeck, District Wildlife Biologist with ODF&W has reviewed a draft of this Biological Assessment. His comments are included as Attachment 1

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cc: Ty Williams, Astoria
Ron Zilli, Astoria
Tom Savage, Astoria
Jenny Laughman, Astoria
Marcia Humes, Salem
Jodi Kroon, Salem
Roger Welty, Salem
Mike Cafferata, Forest Grove
Herman Biederbeck, ODFW, Tillamook

Table 1. Average Stand DBH (according to ODF's OSCUR timber inventory database -- 'Stand02' and photo/ground review on non-ODF) within the Strum Creek Female Northern Spotted Owl home range.

Note: On non-ODF ownerships, this table assumes that all 'non-suitable' is <12" DBH and 'suitable habitat is 12-17" DBH.

DBH	ODF Ownership								Private Ownership		Total Habitat after ODF timber sales
	Total ODF Acres		Recent Harvests*		Rapid Stanley Acres		Acres Outside Sales		Suitable	Non-Suitable	
	Suitable	Non-suitable	Suitable	Non-suitable	Suitable	Non-suitable	Suitable	Non-suitable			
0-11	0	1677	0	283	0	0	0	1394	--	2262	--
12-17	1013	318	19	37	0	23	994	258	622	--	1616
18-25	1875	0	273	0	0	0	1602	0	--	--	1602
26"+	78	0	13	0	0	0	65	0	--	--	65
Total	2966	1995	305	320	0	23	2661	1652	622	2262	3283

*Includes Grasslands Thinning, which is in an approved sale plan.

Table 2. Suitable Spotted Owl habitat within the Strum Creek Female Northern Spotted Owl home range.

	Suitable	Non-Suitable
ODF	2966	1995
Private	622	2262
Total	3588	4257
Recent Harvests*	305	320
Rapid Stanley	0	23
Total Suitable after	3283	

*Includes Grasslands Thinning, which is in an approved sale plan.

Table 3. Stand age (according to ODF's OSCUR timber inventory database -- 'Stand02') on ODF ownership within the Strum Creek Female Northern Spotted Owl home range.

Age	ODF Acres	Recently Harvested*	Acres within Rapid Stanley	ODF Acres Outside Sales
0-39	2014	320	23	1671
40-49	0	0	0	0
50-59	237	4	0	233
60-69	2038	294	0	1744
70-99	442	7	0	435
100+	230	0	0	230
Totals	4961	625	23	4313

*Includes Grasslands Thinning, which is in an approved sale plan.