

Pre-Operations Report

Operation Name: South Rock Creek

County: Linn

Management Basin: Rock Creek

Table 1. Operation Areas, Types and Acres

| Area | Type of Operation | Gross Acres | Net Acres |
|--------------|-------------------|-------------|------------|
| I | PC-M | 263 | 243 |
| II | PC-L | 23 | 22 |
| III | PC-L | 45 | 41 |
| Total | | 331 | 306 |

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 90 inches of rainfall per year. The operation is located within the *Tsuga heterophylla* Zone (Natural Vegetation of Oregon and Washington, Franklin & Dyrness, 1973).

The landform is moderate to very steep slopes in the headwaters of Rock Creek below High Rock. The underlying rocks are sedimentary or volcanoclastic origin.

Pechuck soils make up the soil within the operation. Pechuck soil is a well-drained, colluvial soil. The elevation within the operation ranges from 1,760 feet to 2,880 feet. The slopes range from 5 to 80%. The average 50 year site index for Douglas-fir is 120 for the operation area.

II. CURRENT STAND CONDITION:

Areas I and II are a 74 year-old stand currently classified as Understory. The overstory consists mostly of Douglas-fir, western hemlock and western red cedar trees. The understory contains vine maple, salal, oxalis and sword ferns. There are currently 7 snags per acre; 800 cubic feet per acre of sound down wood; and 3,200 cubic feet per acre of down wood in all decay classes. (SLI 2004) Approximately 100 acres of Area I were thinned in 1978.

Area III is a 69 year-old stand currently classified as Closed Single Canopy. The overstory is a mix of Douglas-fir, western hemlock and western red cedar trees. There are a few scattered big leaf maple and red alder trees in the overstory as well. What little understory is present consists of dwarf Oregon grape and sword fern. There are currently 20 snags per acre; 1,800 cubic feet per acre of sound down wood; and 7,900 cubic feet per acre of down wood in all decay classes. (SLI 2004)

Table 2. Stand Inventory Information

| Area | Prescription | Stand ID ¹ | Species | Age | DBH | BA | TPA | SDI | Acres ² |
|------|--------------|----------------------------|---------|-----|-----------|------------|-----------|-----------|--------------------|
| I | PC-M | 12727 | DFRC | 74 | 18 | 237 | 132 | 57 | 263 |
| | | Target ³ | | | 20 | 153 | 61 | 30 | |
| II | PC-L | 12758 | DFRC | 74 | 18 | 237 | 132 | 57 | 23 |
| | | Target ³ | | | 19 | 194 | 90 | 40 | |
| III | PC-L | 12726 | DFWH | 69 | 15 | 311 | 237 | 80 | 45 |
| | | Target ³ | | | 20 | 176 | 90 | 40 | |

1 The source of stand inventory information is SLI from 2004 for trees greater than 8 inches in diameter.

2 The acres are based on GIS and include 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:

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.

Area I

The DFC for Area I (SLI type 12758) is Layered. The goal for this thinning will be to encourage the growth of all species in the stand.

The anticipated pathway for Area I :

This will be the second commercial thinning of the stand:

- Moderate thin the current stand while minimizing damage to the understory.
- Evaluate the entire stand in 15-20 years for another possible entry to encourage the growth of the understory trees.

Area II

The DFC for Area II (SLI type 12758 and 12727) is Layered. The light thinning prescription for the area will remove the suppressed Douglas-fir and a few of the cedar and hemlock. All hardwood will be kept when possible and may count toward the leave SDI and BA. The stand will be difficult to thin due to the steep terrain. Therefore, care will be taken to avoid damage to the residual stand. The stand should have a mix of large Douglas-fir, cedar, hemlock and a few scattered hardwoods when completed.

The anticipated pathway for Area II:

- Lightly thin the current stand removing the suppressed Douglas-fir and a few of the other conifer species.
- Evaluate the stand in 15-20 years for a second thinning to remove some of the hemlock and cedar trees to open up the stand.

Area III

The DFC for Area III (SLI type 12726) is REG, UDS, or CSC. The goal for the prescription will be to remove the suppressed and dying conifer and encourage the growth of the largest and best growing conifer trees.

The anticipated pathway for Area III:

- Lightly thin the current stand. This is an initial entry into a dense stand of mostly conifer. A light thinning is warranted.
- The stand will be evaluated in 15-20 years for another thinning or the possibility of a regeneration harvest.

Table 3. Stand Structure Information

| Area | Stand ID | Current | Post Harvest ¹ | Desired Future | Acres |
|------|----------|---------|---------------------------|----------------|-------|
| I | 12758 | UDS | UDS | LYR | 263 |
| II | 12727 | UDS | UDS | LYR | 25 |
| III | 12726 | CSC | CSC | GEN | 45 |

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:

The proposed management prescription for Area I is:

- Thin all trees greater than 8 inches DBH to: BA of 153, TPA of 61, average DBH of 20 inches, and an SDI of 30%.
- Keep all hardwoods and all noble fir.
- Keep all western hemlock and western red cedar less than 10" DBH and greater than 30" DBH.
- Keep all Douglas-fir greater than 30" DBH.

- Maintain the existing down wood and snags where they do not pose a safety hazard. At the completion of the operation at least 2 snags per acre will be within Area I.
- The **total residual stand (overstory and understory) in Area I will be:** BA of 166, TPA of 3,250, average DBH of 1 inch and an SDI of 35%. The residual numbers are skewed toward the smaller diameter trees. These numbers are here to show the plethora of seedlings to be used for the layers in the stand.

The proposed management prescription for Area II is:

- All trees greater than 8 inches DBH thin to: BA of 194, TPA of 90, average DBH of 19 inches, and an SDI of 40%.
- Hardwoods will be reserved from harvest when not located within a road right-of-way or cable corridor.
- Maintain the existing down wood and snags where they do not pose a safety hazard. At the completion of the operation at least 2 snags per acre will be within Area II.
- The **total residual stand (overstory and understory) in Area II will be:** BA of 204, TPA of 152, SDI of 40% and DBH of 13 inches.

The proposed management prescription for Area III is:

- All trees greater than 8 inches DBH thin to: BA of 176, TPA of 90, an average DBH of 20 inches, and an SDI of 40%.
- Maintain the existing down wood and snags where they do not pose a safety hazard. At the completion of the operation at least 2 snags per acre will be within Area III.
- The **total residual stand (overstory and understory) in Area III will be:** BA of 176, TPA of 91, an average DBH of 20 inches and an SDI of 40%.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

| Ownership | | Sale Type | |
|------------------|-----|--------------------------|----------|
| BOF | CSL | Cash | Recovery |
| 100% | % | <input type="checkbox"/> | x |
| Planned Quarter: | | 3 | |

| | Conifer | Hardwood | Total |
|-------------------------|-------------|----------------------|-------------|
| Net Volume (MBF) | 2,964 | 32 | 2,996 |
| Stumpage Value (\$/MBF) | \$350 | \$150 | |
| Estimated Gross Value | \$1,037,400 | \$4,800 | \$1,042,200 |
| | | Project Costs: | \$177,083 |
| | | Estimated Net Value: | \$865,117 |

VI. TRANSPORTATION PLANNING AND HARVESTING:

Access: SRC Road, SRC 1400, 1410, 1450, 1500, and 1600 spurs. Haul will be out SRC Rd. Otherwise, haul will be TR 1200, SRC 900, SRC. All roads are surfaced and in good condition but will need some drainage rehabilitation, brushing, and grading. Five spurs will be constructed that total 5,200 feet. These spurs will have a 16 foot subgrade plus a ditch and will be surfaced with pit run rock. During 1997, a portion of the SRC Rd and the SRC 1200 Rd washed out. These sections of road will be repaired with this operation by placing new culverts and repairing the road surfaces.

Logging: The unit is approximately 40% ground logging and 60% cable. Ground slopes in the area range from 5% to 80%.

Project work: New construction – 5,200 feet
 Improvement – 2.66 miles
 Brushing – 5.5 miles
 Repair 2 blowouts

Table 5. Transportation Planning Summary (Miles).

| Activity | Mainline | Collector | Rocked Spur | Dirt Spur |
|-------------|----------|-----------|-------------|-----------|
| Construct | 0 | 0 | 1 | 0 |
| Improve | 0 | 2.66 | 0 | 0 |
| Maintain | 0 | 5.8 | 0 | 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 are no streams containing listed fish within the operation. Rock Creek, a large, fish bearing stream is located at the bottom of Areas I and II. Rock Creek is an important stream for steelhead habitat. This habitat ends down stream from the proposed operation. There are approximately 10 small, non-fish streams located within the entire operation. The overstory along the non-fish streams consists of Douglas-fir, western red cedar and some hardwoods. The overstory on Rock Creek consists of red alder, Douglas-fir and some western hemlock.

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 the non-fish streams or within 50 feet of the fish bearing streams, 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. Road ditches will be disconnected from streams, 5. Road maintenance will be required during log hauling.

VIII. T&E SPECIES CONSIDERATIONS:

This operation was surveyed for Northern Spotted owls during the 2005 survey season with one response. It will be surveyed again in 2006. A portion of this

operation is located within the Snowy South Northern Spotted owl site. A biological analysis (BA) has been drafted by an ODF biologist. This BA will be reviewed by both the Oregon Department of Fish and Wildlife and the US Department of Fish and Wildlife. The biological assessment and comments from both agencies will be reviewed by the District Forester, Program Director and the Area Director who will then determine how to proceed with the planned operations.

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 bands of steep and very steep slopes especially in the lower slopes of both sale areas. The initial hazard and risk assessment from the geotechnical specialist is high. The geotechnical specialist will be consulted during sale layout to determine if a field visit is needed.

X. RECREATION RESOURCES:

There are no developed recreational resources located within the operation. However, hunting, horseback riding, and sight seeing occur within the area.

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:

Area II and the northern portions of Areas I and III can be seen from Highway 22 and some parts of Mill City. Since the thinnings will be light to moderate within the operation, the impact to the visual resources should be minimal.

XIII. OTHER RESOURCE CONSIDERATIONS:

There are no other resource considerations for this operation.

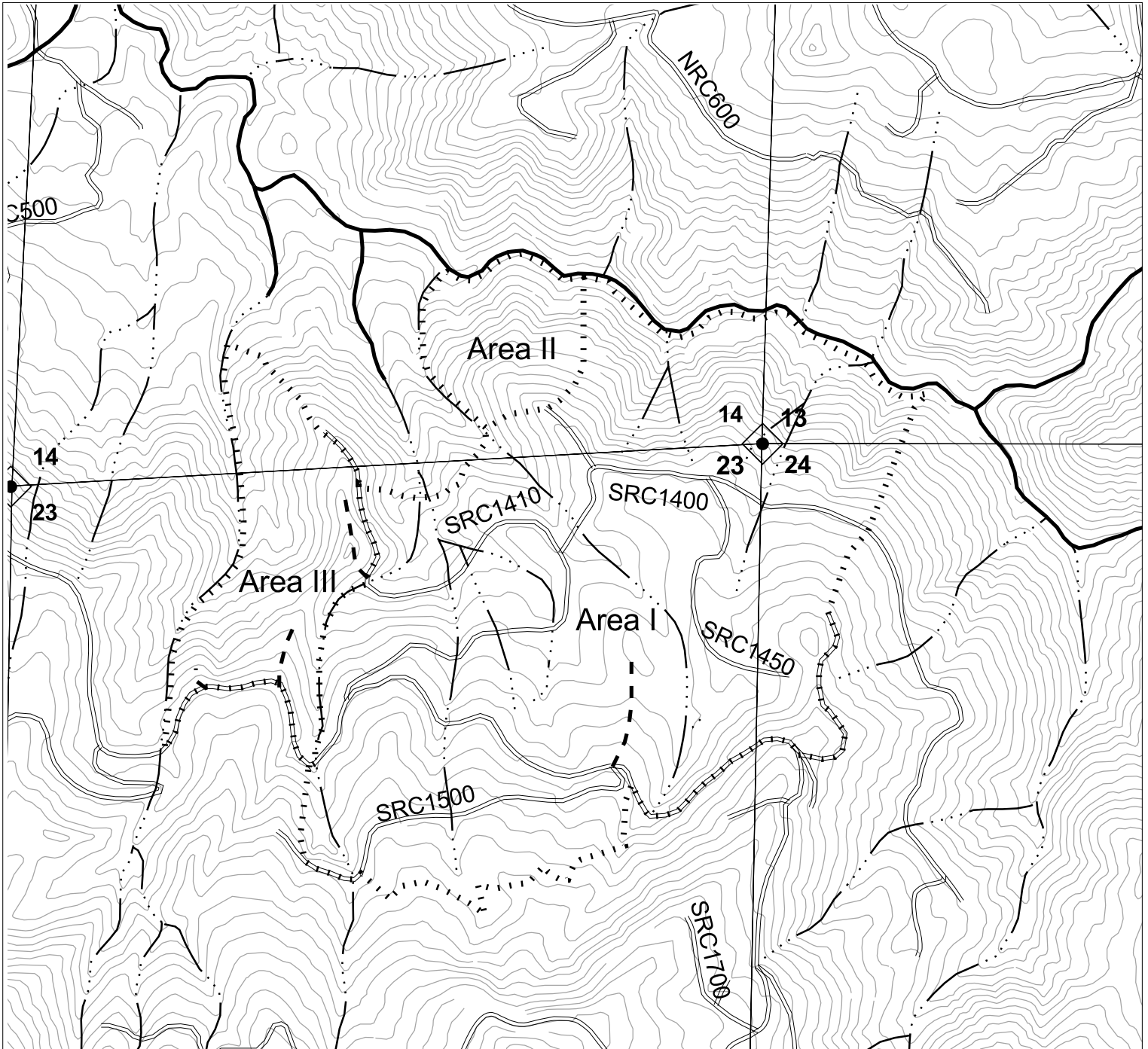
XIV. LMCS:

Area I, II & III contains Focused Stewardship, Visual. See Section XII, Scenic Resources, for the management guidelines to be utilized.

Area I contains Focused Stewardship, Aquatic and Riparian Habitat for eight perennial Type N streams. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.

Area II contains Focused Stewardship, Aquatic and Riparian Habitat for one perennial Type N stream. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.

Area III contains Focused Stewardship, Aquatic and Riparian Habitat for one perennial Type N stream. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.



**SOUTH ROCK CREEK
--TOPOGRAPHY--
FY '07 SALE PLAN
NORTH CASCADE DISTRICT**

Portions of Sections 13, 14, 23 and 24
T10S, R3E W. M.
Linn County, OR

Approximate Net Acreage:
 Area I: 243 acres (PC-M)
 Area II: 22 acres (PC-L)
 Area III: 41 acres (PC-L)
 TOTAL: 306 acres

- South Rock Creek
- Roads
- New Road Construction
- Streams
- FISH
- NONFISH
- UNKNOWN
- 40 foot contours













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**SOUTH ROCK CREEK
--DESIRED FUTURE CONDITION--
FY '07 SALE PLAN
NORTH CASCADE DISTRICT**

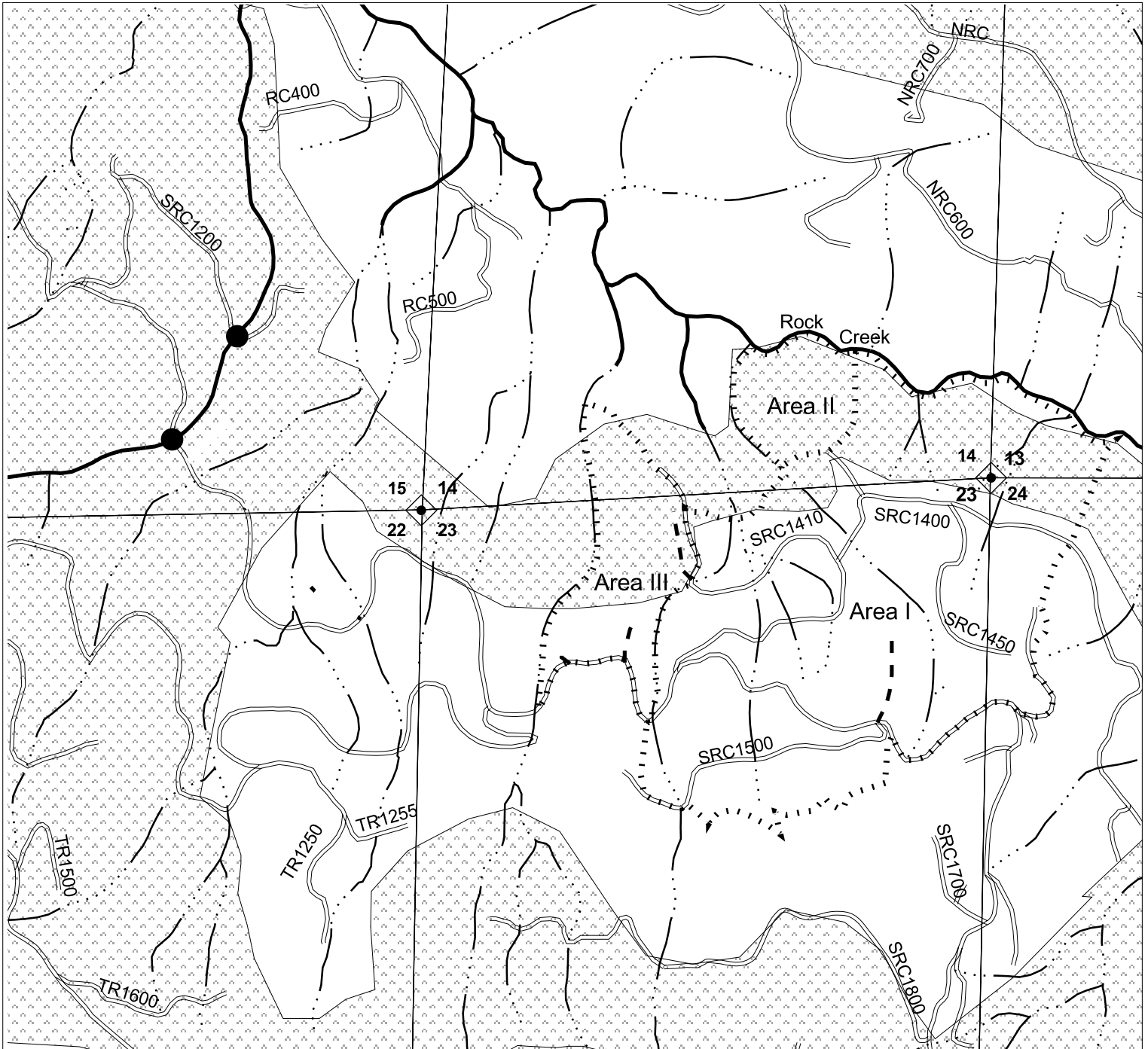
Portions of Sections 13, 14, 23 and 24
T10S, R3E W. M.
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-  South Rock Creek
-  Roads
-  New Road Construction
-  Streams
-  FISH
-  NONFISH
-  UNKNOWN
-  Desired Future Condition
-  LYR
-  OFS



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SOUTH ROCK CREEK

--KEY RESOURCES--

FY '07 SALE PLAN

NORTH CASCADE DISTRICT

Portions of Sections 13, 14, 23 and 24

T10S, R3E W. M.

Linn County, OR

- Blowout Repairs
- South Rock Creek
- Roads
- New Road Construction
- Streams
- FISH
- NONFISH
- UNKNOWN
- Visual

1000 0 1000 Feet



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 TOTAL: 306 acres



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SUBJECT: Preliminary Biological Assessment South Rock Creek timber sale: potential impacts to Snowy South northern spotted owl site.

TO: Jerry Chetock

FROM: Rod Kraemer and Matt Gostin

DATE: 13 January 2006

Executive Summary

The Oregon Department of Forestry (ODF) has proposed South Rock Creek timber sale in the Santiam State Forest during Fiscal Year (FY) 2007. The South Rock Creek timber sale consists of three units (Area 1 = 263 acres, Area 2 = 23 acres, Area 3 = 45 acres) (Figure 1). A portion of Area 1 is located within the 1.2 miles of the Snowy South northern spotted owl (NSO) site, a threatened species. South Rock Creek timber sale will impact 55 acres of suitable NSO habitat. South Rock Creek timber sale poses a 'low' risk to the continued viability of the Snowy South NSO site, and is consistent with the department's legal and policy mandates to maintain existing NSO sites on ODF lands.

Purpose

The ODF has proposed South Rock Creek timber sale in the Santiam State Forest located in Linn County, Oregon. South Rock Creek timber sale is in the FY 2007 operations plan of the North Cascade District. Since South Rock Creek timber sale is located near the Snowy South NSO site, a Biological Assessment (BA) is needed to evaluate impacts of the proposed timber sale to the owl site. The NSO is a state and federally listed 'threatened' species by the Oregon Department of Fish and Wildlife (ODFW) and the U.S. Fish and Wildlife Service (USFWS), respectively.

Policy Direction

The Northwest Oregon State Forests Management Plan provides management direction for all Board of Forestry Lands and Common School Forest Lands in northwest Oregon. The resource management goals and strategies are intended to achieve the greatest permanent value through a system of integrated resource management. This plan is guided by legal and policy mandates. The ODF's management activities are conducted in compliance with all state and federal environmental laws, including the state and federal Endangered Species Act (ESA), respectively. 'Take' of threatened or endangered species is prohibited under Section 9 of the federal ESA. The term 'take' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Such acts may include significant habitat modifications or degradation when it actually kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. The policies and procedures for lands managed by the ODF in northwest Oregon are to avoid 'take' of NSO. 'Take' avoidance

is accomplished on lands managed by the ODF in the North Cascade District through the application of the rescinded federal incidental take guidelines (USFWS 1990).

The USFWS recommends the following stepwise approach to avoid or reduce the risk of incidental take in the Oregon Cascades province:

1. Conduct NSO surveys during the breeding season and prior to any harvest activity according to protocols endorsed by the USFWS;
2. Avoid any harvest activity which results in less than 70 acres of the best available suitable NSO habitat encompassing the nest site and/or activity center of a pair of spotted owls;
3. Avoid any harvest activity which results in less than 500 acres of suitable NSO habitat within a 0.7 mile radius (1000 acres) of a nest site and/or activity center; and
4. Avoid any harvest activity which results in less than 1182 acres of suitable NSO habitat within a 1.2 mile radius (2955 acres) of nest site and/or activity center.

Survey Information

Kingfisher Ecological, Inc., conducted surveys for northern spotted owls in all potential owl habitat in and around planned timber sales and known owls sites in the ODF Cascade District. Potential spotted owl habitat was surveyed in accordance with the protocol for surveying proposed management activities that may impact NSO (USFWS 1992). The Snowy South northern spotted owl site was established in 1999, when a non-nesting pair was located. The Activity Center (AC) was located where the pair was first seen (Figure 1). In 2000, the historic female and a new unidentified male were found in the core, but no young were detected. In 2001, the historic female was found, but she was not nesting; no males were detected. In 2002, the historic female was paired with another new male that was banded at the Upper Rock site in 1995; no young were detected. In 2003, the historic pair was located, and they did not produce young. In 2004, a new sub-adult pair occupied this site; they did not nest. The male was unbanded, and the female had a red/white/red band on her left leg. There were no responses in 2005. Status (pair) and AC remain the same (Kingfisher Ecological, Inc. 2005).

Habitat Information

Current stand condition. Area 1 is a 99 year-old stand currently classified as Understory (UDS). This stand type occurs after the stem exclusion stage has created small openings in the canopy, when enough light and nutrients become available to allow herbs, shrubs, and new trees to grow again in the understory. These stands have trees larger than sapling size. Tree canopies may range from a single species, single-layered, main canopy with associated dominate, codominate, and suppressed trees; to multiple species canopies. However, significant layering of tree crowns has not yet developed.

The overstory consists of mostly Douglas-fir, western hemlock and western red cedar trees. The stands in Area 1 have the following average stand characteristics: diameter breast height (DBH)=18, basal area (BA)=237, trees per acre (TPA)=132, stand density index (SDI)=57. The understory contains vine maple, salal, oxalis, and sword fern. There are currently 7 snags per acre; 800 cubic feet per acre of sound down wood; and 3200 cubic feet per acre of down wood in all decay classes. Approximately 100 acres (40%) of Area 1 were thinned in 1978.

Desired stand condition. The desired future condition for Area 1 is Layered (LYR). This stand type occurs as the process of understory reinitiation progresses where openings in the canopy persist. Shrub and herb communities are more diverse and vigorous, and two or more distinct layers of tree canopy exist. The anticipated pathway to achieve LYR for Area 1 begins with moderately thinning the overstory which currently supports 131 trees per acre of trees 8 inches DBH or larger. The goal for this thinning will be to encourage the growth of all species in the stand. This will be the second commercial thinning of the stand. The stand is expected to develop into Layered condition in 5-10 years after this operation is completed. The understory in the stand will be evaluated for a possible precommercial thin (PCT) in 5-10 years, and the entire stand will be evaluated in 15-20 years for another possible entry to encourage the growth of the understory trees.

Sale Prescription

The proposed management prescription for Area 1 is:

- Thin all trees greater than 8 inches DBH.
- Keep all hardwoods and noble fir.
- Keep all western hemlock and western red cedar less than 10 inches DBH and greater than 30 inches DBH.
- Keep all Douglas fir greater than 30 inches DBH.
- Maintain the existing down and snags where possible.

After harvesting, Area 1 is expected to have the following average stand characteristics:

- DBH=20.
- BA=153.
- TPA=61.
- SDI=30.

Impact Assessment

For the purposes of ESA compliance, the USFWS (1990) describes suitable NSO habitat as stands that exhibit the following characteristics:

- moderate to high canopy closure;
- a multi-layered, multi-species 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 mature and old conifer forests, but 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 (USFWS 1990).

In ODF's experience, NSO occur in some forest stands that are less than 80 years old. Several studies have investigated NSO home range and habitat use in young forests on ODF lands in western Oregon (Islam et al. 1997, Anthony et al. 2000, Tappeiner et al. 2000, Glenn et al. 2004). Islam et al. (1997) investigated the relationship between demography of NSO and habitat characteristics at the landscape level on ODF lands, and reported that the minimum diameter of the dominant conifer trees in stands of NSO habitat should be at least 18 inches and stands should also contain about three size classes and have variation in stem density within the stand. Anthony et al. examined habitat in owl home ranges on ODF lands in the Northern Coast Range (NCR) of Oregon and Elliott State Forest (ESF) in south-central Oregon Coast Range. Individual owls in the NCR study area selected mature forest and hardwood forest, and avoided young and pole stands. At ESF, owls selected mixed-age conifer, mature conifer, old conifer, and hardwood forest, and avoided young and pole. Owls were also found close to conifer-hardwood ecotones more often than expected in both study areas. At NCR, Tappeiner et al. 2000 reported that nest and forage sites had larger trees, lower tree densities, and more hardwood stems than low use sites, and that higher owl success (combination of site occupancy and reproduction indices) was positively correlated with average tree size and negatively correlated with tree density. Glenn et al. 2004 reported that individual owls on their study areas in the NCR and ESF varied greatly in habitat use patterns and appeared to be using different strategies for surviving in younger forests. In younger, or less structurally diverse landscapes, the use of hardwoods was more frequent than in landscapes dominated by older conifer forest. Hardwoods may contribute structural diversity and prey base than are otherwise in short supply in relatively young, homogenous landscapes lacking remnant old-forest structures.

Northern spotted owl habitat determinations within 1.2 miles of the Snowy South northern spotted owl nest site were made by ODF wildlife biologists and foresters using results of NSO research on ODF lands, information about forest stand age and average stand diameter on ODF lands from the department's computerized forest inventory system databases (Figure 2), aerial photo interpretation, and ground-truthing. Based upon these findings, NSO habitat (Figure 3) for this assessment was defined as:

- Forest stands greater than 18 inches average DBH provided suitable habitat for NSO.

- Forest stands between 12-17 inches average DBH provided suitable or non-suitable habitat for NSO depending on the presence/absence of structural characteristics needed to accommodate owls. ODF biologists, using professional judgment, determined the suitability of habitat for these stands by considering stand density, structural diversity, and tree diversity. Extremely dense stands may preclude spotted owl use because of the difficulty for owls to maneuver through the stand. Stands lacking in vertical and horizontal diversity and tree species diversity may provide poor habitat for prey species and/or few perching/hunting opportunities for spotted owls.
- Forest stands less than 12 inches average DBH provided non-suitable habitat for NSO.

Forest habitat in Area 1 is dominated by a mature, densely stocked stand of Douglas fir, mixed with varying amounts of western hemlock, western red cedar, noble fir, and hardwoods. The forest habitat possesses important structural components, including moderate to high canopy closure, a multi-layered canopy dominated by large overstory trees, snags, and large down logs. The size and diversity of trees species and structural components in this stand are adequate to provide nesting, roosting, and foraging opportunities for northern spotted owls. Therefore, forest habitat in Area 1 South Rock Creek timber sale is suitable NSO habitat. There are 673 acres of suitable owl habitat within 0.7 miles, and 1680 acres of suitable owl habitat within 1.2 miles of the Snowy South NSO nest site (Table 1).

Table 1. Total acres of suitable and non-suitable northern spotted owl (NSO) habitat within 0.7 mile and 1.2 mile radii of Snowy South NSO site.

| <u>Landowner</u> | <u>0.7 mile radius</u> | | <u>1.2 mile radius</u> | |
|------------------|------------------------|---------------------|------------------------|---------------------|
| | <u>Suitable</u> | <u>Non-suitable</u> | <u>Suitable</u> | <u>Non-suitable</u> |
| ODF | 673 | 308 | 1502 | 844 |
| BLM | 0 | 0 | 77 | 103 |
| Other | 0 | 0 | 101 | 253 |
| TOTAL | 673 | 308 | 1680 | 1200 |

South Rock Creek timber sale will impact and modify 0 acres of suitable owl habitat within 0.7 miles and 55 acres within 1.2 miles of the Snowy South NSO AC (Figure 3). Approximately, 673 acres of suitable owl habitat will remain within 0.7 miles and 1625 acres of suitable owl habitat will remain within 1.2 miles of the Snowy South NSO AC following completion of the South Rock Creek timber sale.

Risk Assessment

South Rock Creek timber sale poses a 'low' risk to the continued viability of the Snowy South NSO site. Total acres of suitable spotted owl habitat are 35% higher than the USFWS recommendations to reduce potential risk of incidental 'take' within 0.7 miles, and 37% higher than USFWS recommendations to reduce potential risk of incidental 'take' within 1.2 miles of the Snowy South NSO nest site, respectively. Total acres of suitable owl habitat are sufficient to avoid incidental 'take' under the federal ESA. Specifically, South Rock Creek timber sale will avoid timber harvest which:

- results in less than 70 acres of the best available suitable owl habitat encompassing the AC.
- results in less than 500 acres of suitable NSO habitat within a 0.7 mile radius of the AC; and
- results in less than 1182 acres of suitable NSO habitat within a 1.2 mile radius of the AC.

The proposed action is consistent with ODF's legal and policy mandates to maintain existing NSO sites on ODF lands.

In addition, the proposed action is also consistent with management recommendations provided by several researchers investigating NSO on ODF lands. Anthony et al. 2000 recommended that habitat for NSO may be enhanced or created through active management, and suggested that carefully designed thinning operations developed after detailed site evaluations may accelerate the development of stands into forests with structural attributes more likely to accommodate NSO. Tappeiner et al. 2000 reported that low stand density, whether achieved naturally or created through management appeared to be important in the formation of stand structural characteristics associated with NSO use on ODF lands in the NCR and ESF. Glenn et al. 2004 recommended that timber harvest be avoided in NSO core areas.

Consultation with ODFW

Comments to be provided by Charlie Bruce

Literature Cited

Anthony, R.G., B. Glenn, K. Swindle, and M.C. Hansen. 2000. Home range and habitat use of northern spotted owls on state forest lands in the Oregon Coast Range, Final Research Report. Appendix B in Glenn, E., R. Anthony, A. Ellingson, J. Tappeiner, T. Nierenberg. Summary of northern spotted owl research on Oregon Department of Forestry Lands in the Coast Range. Unpubl. Report, Oregon Cooperative Fish and Wildlife Research Unit, Corvallis, Oregon.

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