

Pre-Operations Report

Operation Name: Green Tweener Thin (Alternate)

County: Marion

Management Basin: Green Basin

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres
I	PC-M	71	68
II	PC-M	128	120
Total		199	188

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 & Dyness, 1973).

The landforms are moderate to very steep headwaters of Little Sardine Creek and several tributaries to Little Sardine Creek and the North Santiam River. The underlying rocks are sedimentary & igneous origin mapped as "Undifferentiated tuffaceous sedimentary rocks." Areas 1 & 2 are in a large scale landslide deposit on the geology map. Area 1 is in an area mapped as a large scale landslide deposit.

Pechuck soils make up the soil within the operation. Pechuck soil is a well-drained, colluvial soil. The elevation within the operation ranges from 2,500 feet to 3,500 feet.

II. CURRENT STAND CONDITION:

Area I is located within a 50 year old stand currently classified as Understory. This stand was pre-commercially thinned in 1975 and fertilized in 1978, 1993 and 2004. The overstory consists of Douglas-fir with some scattered western hemlock. The understory consists of vine maple, rhododendron, Oregon grape, huckleberry, salal, bear grass, and ferns. There are 6 snags per acre; 200 cubic feet per acre of sound down wood and 2,500 cubic feet per acre of down wood in all decay classes currently within Area I. (SLI 2005)

Area II is located within a 50 year old stand currently classified as Understory. This stand was fertilized in 1978 and 1993. The overstory consists of Douglas-fir with some scattered western hemlock. The understory consists of vine maple, Oregon grape, bear grass, ferns and salal. There are 4 snags per acre; 100 cubic feet per acre of sound down wood; and 2,700 cubic feet per acre of down wood in all decay classes currently within Area II. (SLI 2005)

Table 2. Stand Inventory Information

Area	Prescription	Stand ID ¹	Species	Age	DBH	BA	TPA	SDI	Acres ²
I	PC-M	12474	DF	50	13	201	210	6255	71
		Target ³			17	120	79	30	
II	PC-M	12469	DF	50	13	192	201	52	128
		Target ³			14	135	122	35	

1 The source of stand inventory information is SLI from 2005 for trees 8 inches or greater DBH.

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 basin is dominated by 50-year old Douglas-fir stands that regenerated after the Sardine Creek fire. The commercial thinning and fertilization operations conducted in this basin during the past 10 years have been very successful in developing UDS stand structure that will develop into LYR structure in time. Area I of the planned operation will receive similar treatments and similar results are expected.

Although 52 percent of the Green Basin is planned for Complex Stand Structure, the remainder is planned for Regeneration, CSC, and UDS stands. (*Cascade District Implementation Plan, 2003*) Approximately 2 percent of the basin is currently considered to be Complex Stand Structure. Area II of the planned operation will receive similar treatments to Area I, but thinnings will be fewer and lighter. This should allow Area II to develop UDS characteristics, but structural development beyond that is not expected.

Area I

The DFC for Area I (SLI type 12474) is Layered. The District's Implementation Plan (2003) estimated that DFC could be attained in 60-80 years. Douglas-fir mixed with a few western hemlock and hardwoods will comprise the overstory of the stand. Layers beneath the main canopy will be comprised of hemlock, red cedar, and various hardwoods and brush species. Scattered openings with noble fir, vine maple, sword fern, salal, rhododendron, and various herbs/forbs will occupy about 20% of the area. Bear Grass is a fairly common species in this area both in the understory and in openings.

The **Anticipated Pathway for Area I** begins with thinning the Douglas-fir overstory.

- This will be a medium intensity, first entry, commercial thinning in a 50-year old stand.
- Openings within the stand are expected to occur due to root disease and harvesting logistics.
- In 3-5 years, the stand will be a candidate for fertilization.
- In 10-15 years, the stand will be commercially thinned for the second time. This thinning will be moderate to heavy. The understory trees will be "reserved" during this operation, but impacts from logging will result in non-uniform stocking. The opportunity to develop snags and down wood with this entry will be evaluated, and implemented if conditions are suitable.
- A third commercial thinning is planned when the overstory trees are about 80-years old. Following this operation, the understory will be cultured by regulating density and species mixture, and managing competing vegetation.
- Regeneration Harvest is planned to occur when the age of the overstory is between 110 and 150 years.

Area II

The DFC for Area II (SLI type 12469) is for a non-complex stand or general forest structure. The District's Implementation Plan (2003) estimated that DFC could be attained in 60-80 years. The Douglas-fir overstory will be encouraged to grow to a mature condition while maintaining stand vigor through thinning entries. Few species other than Douglas-fir occur in the overstory, but those present will be favored in the residual stand.

The **anticipated pathway for Area II** begins with thinning the Douglas-fir overstory.

- This will be a moderate intensity, first entry, commercial thinning in a 50-year old stand.
- Some openings in the stand will occur but less than in Area I.
- In 3-5 years the stand will be a candidate for fertilization.

- In 10-15 years the stand will be commercially thinned for the second time. This will be another light thinning designed to keep the stand thrifty. Some snags and down wood may be developed.
- Regeneration Harvest is planned to occur between overstory age 70 and 80 years.

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest ¹	Desired Future	Acres
I	12474	UDS	UDS	LYR	71
II	12469	UDS	UDS	GEN	128

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:

- All trees greater than 8 inches DBH thin to: basal area of 120; TPA 79; ave. DBH 17 inches; and SDI 30%.
- Reserve all hardwoods and understory hemlock, noble fir, and western red cedar from cutting. These trees will not count towards the SDI 30% target above.
- Maintain existing snags which do not pose a safety hazard and downwood.
- Snags and down wood will not be added at this entry because tree size limits the utility and duration of the structural benefit.
- **The Total Residual Stand (overstory and understory) in Area I will be:** basal area of 124; TPA 240; ave. DBH 7 inches; and SDI 34%.

The proposed management prescription for Area II is:

- All trees greater than 8 inches DBH thin to: basal area of 135; TPA 122; ave. DBH 14 inches; and SDI 35%.
- No special efforts to protect understory trees will be made, but many will survive.
- Maintain existing snags which do not pose a safety hazard and down wood.
- **The Total Residual Stand (overstory and understory) in Area II will be:** basal area of 155, TPA 265; ave. DBH 9 inches; and SDI 42%.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

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

	Conifer	Hardwood	Total
Net Volume (MBF)	1,371	0	1,371
Stumpage Value (\$/MBF)	\$300	0	
Estimated Gross Value	\$411,300	0	\$411,300
		Project Costs:	\$40,000
		Estimated Net Value:	\$371,300

VI. TRANSPORTATION PLANNING AND HARVESTING:

The sale area is accessed from Highway 22, then 5 miles of the Niagara Forest Road, a collector road that is a mostly a pit-run surface with some crushed rock surfacing. Three other existing pit run rocked spur roads access the two sale units. There will also be a total of 5 more spur roads constructed for the sale. Of the 5 spurs constructed, 4 will have a pit run surface to facilitate cable logging in seasonal periods that are wet. The one un-rocked road 1,150 feet in length will only be needed for a short period of time and can be used during dry weather periods. None of the new roads cross high landslide hazard locations. One pump chance (Waver Lake) will be re-constructed as part of the project work with this sale. The Salem Geotechnical specialist has been involved with this decision and will help design repairs. Some minor road brushing will be reviewed during sale layout to determine what is needed.

The harvest systems designed for the sale are primarily cable logging for 80% of the sale area and ground based logging systems for the remainder. Area I to the west has two areas that are less that 35% average side slope that have been ground logged previously.

Table 5. Transportation Planning Summary (Miles).

Activity	Mainline	Collector	Rocked Spur	Dirt Spur
Construct	0	0	0.68	0.22
Improve	0	0	0	0
Maintain	0	5	2	0.22
Close/Block	0	0	0	0.22
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. There are 6 small non-fish bearing streams located within the operation. The overstory vegetation along these streams consists of Douglas-fir, western hemlock and red alder. The understory vegetation consists of vine maple, Oregon grape and ferns.

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, 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 2004 survey season and 2005 survey season with responses. The operation will be surveyed

again in 2006. Area II is located within the Drop Off Northern Spotted Owl Site. A biological analysis (BA) will be 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:

The partial cut planned in Area 1 is not anticipated to have any significant negative affect on the slope stability of the "large scale landslide deposit." There are bands of very steep slopes throughout Area 2. The initial hazard and risk assessment from the geotechnical specialist is high. The geotechnical specialist will be consulted during field work to determine if a field visit is needed.

X. RECREATION RESOURCES:

While there are no developed recreational resources within the operation, this area is popular for hunting, sight-seeing, hiking, and special forest product harvesting

XI. CULTURAL RESOURCES:

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

XII. SCENIC RESOURCES:

There are no scenic resources within the operation.

XIII. OTHER RESOURCE CONSIDERATIONS:

There is a 2 acre research plot located within Area I. This is a control plot for a joint study between ODF and OSU on Swiss Needle cast. No thinning will occur within the plot.

XIV. LMCS:

Area 1 contains Focused Stewardship, Aquatic and Riparian Habitat for two perennial Type N stream. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.

Area 1 contains Special Stewardship, Transmission Lines.

Area 1 contains Special Stewardship, Research, See Section XIII Other Resource Considerations, for the management guidelines to be utilized.

Area 2 contains Focused Stewardship, Aquatic and Riparian Habitat for four perennial Type N stream. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.

Area 2 contains Special Stewardship, Operationally Limited.