

Pre-Operations Report

Operation Name: Brix Incline
County: Tillamook
Management Basin: Lower Nehalem

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres ¹
1	RC	239	190
Total		239	190

1. The net acres are based on orthophotos and GIS and exclude roads, stream buffers, and reserve areas.

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

Slopes have a northern aspect and range from 10% to 70%. Elevations range from 520 to 1880 feet. The major soil type is Killam.

The landform is moderate with a few steep slopes in the lower portion of Tank Creek above Enright and the slopes to the north draining directly to the Salmonberry River. There is a very large scale landslide deposit feature mapped in the north portion of the sale area. The underlying rocks are igneous origin flow of the Tillamook Volcanics.

II. CURRENT STAND CONDITION:

Table 2. Stand Inventory Information⁴

Area	Prescription	Stand ID ¹	Species	Age	DBH	BA	TPA	SDI	Net Acres ²
1	RC	101	RA, DF, WH/SS	60	14.0	214	201	57	190
		Target ³	RA,DF, WH/SS	60	19.5	52	25	12	190

1. The source of stand inventory information is from field reconnaissance cruise plots taken in 2005.

2. The net acres are based on orthophotos and GIS and exclude roads, stream buffers, and reserve areas.

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

4. These numbers are based on plot data taken to this point and final numbers may differ significantly from the actual conditions significantly. The directive for minor and major modifications will be followed for further review.

The sale area burned in the 1945 Salmonberry Fire and naturally regenerated. The sale is a mixed alder stand that has large and small pockets of 60 year old

natural open grown Douglas-fir throughout. The Douglas-fir pockets are located mainly on the ridges while the majority of the alder is found on the mid to lower portion of the slopes. Due to stand age, the alder in this stand has poor height and diameter growth. The crown closure in the larger diameter Douglas-fir pockets is reaching 80%, causing mortality in the understory conifer and shrub species, receding live crown ratios on dominant trees, and reduced diameter growth. There are also a few scattered hemlock and spruce in the sale but they are few and far between. The understory in this stand is fairly dense, comprised mainly of salmonberry and sword fern. This stand has had no prior management.

See Table 2 for specific stand data.

The stand in the sale area is classified as 100% CSC according to the district stand summary information (1999).

There is a high density of large snags and down wood resulting from the Salmonberry Fire. The down wood consists of scattered large old logs (36"+) in Class 3 and 4 stages of decay and some windthrow in decay classes 1 and 2. There are a few hard conifer and small alder snags scattered throughout the sale. There is no SLI inventory data available at this time. During sale preparation different options such as down wood and snag creation, additional green tree retention, and future stand management and monitoring will be considered in order to achieve FMP targets.

III. DESIRED STAND CONDITION and VISION:

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest ¹	Desired Future	Net Acres
1	101	CSC	REG	LYR	190

1. The stand is expected to develop into this condition in the five to ten years after this operation is completed except in REG stands which occur after harvest.

See Section IV: Proposed Management Prescription for more information on Green Tree, Down Wood, and Snag Strategies during operation. Also refer to Landscape Design in the Summary document for more information on strategies to move the district toward Desired Future Condition goals.

Vision:

This area has a desired future condition of LYR. By harvesting a large portion of the slow growing and relatively simple alder and partial cutting the large pockets and scattered small pockets of Douglas-fir it is anticipated that a conifer

dominated LYR structure will be achieved in an accelerated time frame. The residual conifer will be retained in variety of large and small clumps, stringers, as well as scattered individual trees. Mature alder will be retained in small clumps and stringers within the sale area. Non-merchantable alder will be left where feasible adjacent to residual conifer. A mix of conifer species will be planted in openings and in areas of low crown closure. The planted areas will create a second cohort that combined with current and future levels of snags and down wood, and the residual overstory will provide for future horizontal and vertical diversity, ultimately providing an opportunity to move this stand towards a desired future condition of conifer dominated LYR structure. As this stand grows, management opportunities such as pre-commercial thinning and commercial thinning may be used to keep this stand on an accelerated pathway to LYR.

This timber sale combined with adjacent recently managed thinnings, regeneration harvests, future planned sales, and unmanaged stands will create a mosaic across the landscape of openings, small gaps, variable densities, and a variety of stand structures.

IV. PROPOSED MANAGEMENT PRESCRIPTION AND ANTICIPATED PATHWAY:

The prescriptions described below are based on the current stand condition such as overall tree and stand growth, species mix, stand density, and stand health.

See table 2 for prescription targets

Retention Cut:

Area 1: A retention cut will remove a large portion of the merchantable alder and the merchantable Douglas-fir will be thinned to a basal area range of 140 to 160 (25% to 35% SDI). A diameter limit may also be used to remove small Douglas-fir and alder that could hinder reforestation efforts. All other species (conifer and hardwood) will be reserved. A component of merchantable alder (approximately 5 to 7 trees per acre) will be left in small clumps and a component of non-merchantable alder will be left adjacent to residual conifer within the sale area. Unmanaged alder will also be left in stream buffers and headwalls. Following harvest, portions of this sale may be treated for site preparation prior to planting. The openings and areas of low crown closure will be planted with a mix of hemlock, cedar, noble fir and Douglas-fir. Ten to 15 years after successful reforestation this stand will be assessed for PCT opportunities. Approximately 30 to 35 years after successful reforestation the stand will be assessed for commercial thinning opportunities. These density management treatments should help move this stand towards a conifer dominate LYR structure.

Green Tree, Down Wood and Snag Strategies

See also Section III: Desired Future Condition for long term strategies.

Approximately 25 trees per acre will be left within the sale area, which will exceed the green tree retention requirements. There will also be a significant amount of green trees left on the landscape on surrounding precipitous slopes, headwalls, in stream buffers, and those areas not reached by conventional logging methods. All the types of leave trees may function as future source of snags and down wood recruitment across the landscape.

Existing down wood will be left in the sale areas. Down wood recruitment is expected through mortality and windthrow of residual or leave trees, felled snags and tops left during harvest. Small non-merchantable hardwood and conifer will be retained where feasible in harvest units with the expectation they will become short term snags and down wood.

Existing snags not determined to be a safety hazard will be retained and any felled snags will be left for down wood. Creation of snags is expected during harvest activities from rub trees, lift trees, and tail trees and over time by natural processes.

A down wood and snag assessment will be done during sale layout to determine approximate levels which will be used to help develop a snag and down wood prescription for this area.

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:		2	

	Conifer	Hardwood	Total
Net Volume (MBF)	1079	1243	2322
Stumpage Value (\$/MBF) *	\$200	\$200	
Estimated Gross Value	\$215,800	\$248,600	\$464,400
		Project Costs:	\$149,000
		Estimated Net Value:	\$315,400

**Combined Douglas-fir and hemlock stumpage values based on harvest type.*

VI. HARVESTING AND ACCESS CONSIDERATIONS:

The sale areas are accessed via Buck Mountain Road, Brix Incline Road, and North Side Road. These are currently all weather crushed rock roads. See maps for specific road locations and conditions.

Approximately 1.2 miles of existing surface roads will be improved which includes grading, rocking, widening, culvert replacement, spot rocking, sidecast pullback, and adding new culverts. This work will bring all roads up to standards described in *the Forest Roads Manual*.

Approximately 0.82 miles of road will be constructed in order to provide access to the cable yarding areas within the sale. Following harvest, roads within the sale areas will be reviewed for closure. Ground yarding roads will be closed and water-barred following harvest. See summary document for more information on this topic.

A combination of cable yarding systems (85%) and ground yarding (15%) will be used. Ground yarding will generally be limited to slopes under 35%.

Table 5. Transportation Planning Summary (Miles)⁴

Activity	Mainline	Collector	Rocked Spur ¹	Dirt Spur ¹
Construct			0.82	
Improve			1.2	
Maintain ²		14.0		
Close/Block ³				
Vacate ³				

1. *Additional roads may be built by the operator at the time of harvest and will be approved by the State through the Operations Plan. These will be short dead end spurs and closed or blocked after harvest*
2. *All roads accessing the sale area will be maintained during the life of the timber sale contract. Maintenance miles in the table are those roads not being constructed or improved.*
3. *Roads not closed/blocked or vacated at the end of the sale will be reviewed for closure after reforestation is established.*
4. *The numbers in this table reflect planned Project Work associated with the sale.*

VII. AQUATIC RESOURCES AND WATER QUALITY:

The Salmonberry River is a large Type F stream that is adjacent to the northern boundary of the sale. Tank Creek is a large Type F stream that is within the sale area. There is also an unnamed small assumed Type F stream that is within the sale area and is a tributary to the Salmonberry River. This assumed fish stream will be verified by ODF&W during the fish survey season. There are several additional unnamed small perennial streams within the sale areas. These streams will be reviewed and protected appropriately during sale layout based on flow, topography, and terrain.

Stream buffers within or adjacent to harvest unit boundaries will be managed according to *Forest Management Plan* Riparian Strategies. The riparian areas will be reviewed during sale layout for current stand conditions and/or operational constraints for implementing FMP strategies.

Oregon Department of Fish and Wildlife (ODFW) will be requested to complete stream surveys before sale layout begins. Streams of unknown status will be treated as Type F until surveys are completed to verify fish use.

ODF will work with an ODFW fish biologist to identify possible stream enhancement project areas.

In order to protect water quality during active operations, a variety of methods will be used to prevent sediment from entering live streams. These methods include (but are not limited to) maintaining culverts and other road drainage structures, using sediment control devices in road ditches when necessary, and monitoring logging and hauling operations. Culvert installment and replacement in live streams will be conducted between July 1 and September 15. Operations outside of this period will be reviewed with ODFW.

VIII. T&E SPECIES CONSIDERATIONS:

The sale area has been reviewed with the ODF Northwest Oregon Area Biologist. Surveys for marbled murrelets are not required for Brix Incline due to the absence of potentially suitable habitat. It was determined that in the sale area there is potential northern spotted owl habitat within or adjacent to the sale boundary.

Surveys have been and will be conducted during the 2005 and 2006 survey seasons for northern spotted owl. All northern spotted owl surveys were and will be conducted in accordance with USFWS endorsed protocol.

T & E Fish species: See Sections VII, and IX for listed fish protection measures.

T & E Plant species: The sale areas were checked against the Oregon Natural Heritage Program (ONHP) database of known threatened or endangered listed plant locations as well as local records in the Land Management Classification System (LMCS). No listed plants were identified within or adjacent to the sale areas.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

There are only a few steep slopes in the Sale area. There is a significant buffer along Tank Creek. The initial hazard and risk assessment from the geotechnical specialist is moderate to low. The geotechnical specialist will be consulted during field to determine if a field visit is needed.

X. RECREATION RESOURCES:

The sale area is designated as Non-Motorized in the *Tillamook State Forest Comprehensive Recreation Plan* (1993). This sale has been reviewed by the District Recreation Coordinator. Recreational use common to this area includes sightseeing, hiking, hunting, and fishing. No OHV trails were identified within or adjacent to the sale areas.

XI. CULTURAL RESOURCES:

Two cultural sites were identified by the cultural resource inventory. These sites are beginning and end of an incline that was used to move logs from the harvest operation to the mainline. The district is working with the Public Use Coordinator to locate and document any artifacts that are associated with the operation of this incline and to determine the appropriate protection measures when necessary.

XII. SCENIC RESOURCES:

The sale area has a visual classification of Level 2, Moderate sensitivity. The sale will be reviewed by the Public Use Coordinator to determine methods to minimize visual impact. Visual impact will be minimal due to the amount of residual trees being left in the sale area.

XIII. OTHER RESOURCE CONSIDERATIONS:

Stimson is the adjacent landowner to the west boundary of this sale. Property lines will need to be identified and protected. There are also 2 corners that will need to be protected. An easement will need to be obtained from Stimson for access off of the Brix Incline Road to the west side of the sale area. There is also a railroad right-of-way adjacent to the northern portion of the sale area.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

This sale contains Focused Stewardship and Special Stewardship, Aquatic and Riparian Habitat. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.

This sale contains Focused Stewardship, Recreation. There is a recreation buffer along the railroad tracks. This area will be reviewed with the District Recreation Coordinator.