

Pre-Operations Report

Operation Name: Moot Again
County: Tillamook
Management Basin: Lower Nehalem

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres ¹
1	PC	107	79
2	RC	98	48
3	RC	322	275
4	PC	145	61
5	PC	27	23
Total		699	486

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

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

In Area 1 and Area 2 slopes have a northeast aspect. Area 3 has a southern aspect. Area 4 has a western aspect and Areas 5 and 6 have a Northern aspect. Slopes throughout all of the sale areas average approximately 50% to 60%. Elevations range from 80 to 1880. The major soil types are Rye and Killam.

The landform is moderate to very steep slopes around the headwaters of tributary streams to Anderson Creek and an un-named tributary of the Nehalem River to the east and portions of the ridge that divides them. 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	PC	109	WH,DF, RA,SS	65	16.5	270	182	60	79
		Target ³	WH,DF, RA,SS	65	24.1	124	39	23	79
2	RC	110	WH,DF, RA,SS	65	14.3	248	223	49	48
		Target ³	WH,DF, RA,SS	65	20.3	54	24	9	48
3	RC	111	DF,RA,	57	14.7	198	167	52	275
		Target ³	DF,RA	57	27.1	36	9	7	275
4	PC	112	WH,DF, RA,SS	54	17.7	277	162	67	61
		Target ³	WH,DF, RA,SS	54	24.1	120	38	26	61
5	PC	114	WH,DF, RA	33	13.2	203	213	42	23
		Target ³	WH,DF, RA	33	16.9	96	62	18	23

1. The source of stand inventory information is from field reconnaissance cruise plots taken in 2004 and SLI plots taken in 2003.

2. The net acres are based on orthophotos and GIS and exclude roads, stream buffers, and reserve areas and non-required thinning areas. Modified clear cut acres are not contiguous and do not exceed 120 acres.

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.

Area 1: All of this area was burned in the 1933 Tillamook fire and naturally regenerated with of mix of species including hemlock, spruce, alder, and Douglas-fir and has had no prior stand management. The conifer in this stand is very dense (approx. 60% SDI) and has reached stem exclusion, resulting in poor height to diameter ratios, poor live crown ratios, slowed diameter growth, and very little understory. There are some lower density patches scattered throughout the sale area and are comprised of more open grown conifer with an established understory of conifer and shrub species. These patches are mixed with mature alder creating a more complex structure within this stand. Area 1 has been inventoried using the Stand Level Inventory (SLI) procedure and the stand has been identified as UDS.

Area 2: All of this area was burned in the 1933 Tillamook fire and naturally regenerated. This stand is predominately an alder stand with a mix of species including hemlock, spruce, and Douglas-fir in the understory and emerging in the overstory. This mix of alder and understory conifer across the sale area is providing complexity within this stand. This stand has had no prior stand management. Area 2 has been inventoried using the SLI and the stand has been identified as UDS.

Area 3: All of this area was burned in the 1933 Tillamook fire and was planted in the late 1940's. Most of this area naturally regenerated with alder due to the planting being only partially successful. This stand is predominately an alder stand with planted Douglas-fir pockets throughout the area. This stand is located on a steep south slope with low site quality. The Douglas-fir is slow growing and has poor live crown ratios (less than 35%). Due to stand age and site quality, the alder in this stand has poor height and diameter growth. This stand has had no prior stand management. The understory is dense and mainly comprised of sword fern and salmonberry. Area 3 has been inventoried using SLI and the stand has been identified as UDS.

Area 4: This area was burned in the 1933 Tillamook fire and was naturally regenerated with of mix of species including hemlock, spruce, alder, and Douglas-fir and has had no prior stand management. The conifer in this stand is very dense (approx. 67% SDI) and has reached stem exclusion, resulting in poor height to diameter ratios, poor live crown ratios, slowed diameter growth, and very little understory. There are some large pockets of alder throughout the area with an established understory of sword fern, salmonberry, and some hemlock and spruce that are contributing to the short term stand complexity. Area 4 has been inventoried using the SLI and the stand has been identified as UDS.

Area 5: All of this area burned in the 1933 Tillamook Fire and was planted in 1971 with Douglas-fir. This planting was only partially successful so the majority of the stand naturally regenerated with hemlock. This area has had no prior stand management. The conifer is very dense with 100% crown closure and is in the stem exclusion stage. There is very little understory due to the lack of sunlight on the forest floor. Area 6 has been inventoried using SLI and the stand has been identified as UDS.

See Table 2 for specific stand data.

Areas 1 and 2 were combined as one stand in SLI. The SLI measurements were taken in both areas causing the two different stand types to be averaged. Areas 3 and 4 were also combined as one stand in SLI causing the two different stand types to be averaged. All of these areas will be looked at during sale layout to determine if SLI represents all of these stands. SLI has been completed on Area 5.

Down wood, in all of the sale areas, consists of scattered large old logs (36"+) in Class 3 and 4 stages of decay and some windthrow and suppression mortality in decay classes 1 and 2.

Stand Level Inventory Down Wood Information

Area	Stand ID	Stand Level Inventory Completed	Down Wood Decay Class 1 and 2 (ft ³ /Acre)	Down Wood All Decay Classes (ft ³ /Acre)	Down Wood, Greater than 24"DBH, Decay Class 1 and 2 (Logs/Acre)
1	109	Yes	115	2772	0.0
2	110	Yes	115	2772	0.0
3	111	Yes	589	1453	2.65
4	112	Yes	589	1453	2.65
5	114	Yes	279	2163	0.0

In all of the sale areas there are some large snags in various states of decay and some hard snags created from wind and snow damage.

Stand Level Inventory Snag Information

Area	Stand ID	Stand Level Inventory Completed	Snags per Acre greater than 12" DBH	Snags per Acre greater than 24" DBH ¹	Snags per Acre greater than 15" DBH ¹ Decay Class 1 and 2
1	109	Yes	10.0	3.7	0.62
2	110	Yes	10.0	3.7	0.62
3	111	Yes	6.5	5.0	0.80
4	112	Yes	6.5	5.0	0.80
5	114	Yes	3.0	0.60	0.0

III. DESIRED STAND CONDITION and VISION:

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest ¹	Desired Future	Net Acres
1	109	UDS	UDS	GEN(12)/LYR(67)	79
2	110	UDS	REG	GEN(2)/LYR(46)	48
3	111	UDS	REG	GEN(41)/LYR(226)	275
4	112	UDS	UDS	LYR	61
5	114	UDS	UDS	GEN	23

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:

Area 1: This area has a desired future condition of LYR. Partial cutting the dense conifer and the mature alder will maintain and improve individual tree growth, maintain stand complexity, and promote understory conifer and shrub growth as a result of increased light to the forest floor. A component of non-merchantable alder will be left adjacent to residual conifer within the sale area. Small patch cuts will be created by using a diameter cut that will be used to harvest the conifer with poor height to diameter ratios and small diameter alder. This will result in small openings which will add to the variability in the stand density. Planned down wood and snag creation and current levels of snags and down wood, combined with understory development and maintenance, and leaving a residual conifer and hardwood overstory will provide for future horizontal and vertical diversity, ultimately moving this stand towards LYR structure. This stand will be looked at in 15 to 20 years to determine if another entry is needed to maintain structure.

Area 2: This area has a desired future condition of LYR. By harvesting a large portion of the slow growing alder and partial cutting the large pockets and scattered small pockets of conifer 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. A height limit may be used to retain intermediate trees that are providing vertical structure. Mature alder will also be retained in small clumps (3 to 5 trees per acre) and in 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 a 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 structure.

Area 3: This area has a desired future condition of LYR. By harvesting a large portion of the slow growing relatively simple alder, partial cutting the pockets of small Douglas-fir, and planting with a mix of conifer trees, it is anticipated that a complex 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. 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 levels and future planned recruitment 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 dominate 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.

Area 4: This area has a desired future condition of LYR. Partial cutting the dense conifer and removing a portion of the alder will maintain and improve individual tree growth and promote understory conifer and shrub development as a result of increased light to the forest floor. Mature alder in small clumps and non-merchantable alder will be left were feasible adjacent to residual conifer. Small patch cuts will be created by harvesting the alder and by using a diameter cut that will harvest the trees with poor height to diameter ratios. This will result in small openings which will add to the variability in the stand density and promote understory development. A mix of conifer species will be planted in openings and in areas of low crown closure if necessary. The planted areas will create a second cohort. Current and future levels of snags and down wood, combined with understory development and maintenance, and leaving a residual conifer and hardwood overstory will provide for future horizontal and vertical diversity, ultimately moving portions of this stand towards a conifer dominated LYR structure. This stand will be looked at in 15 to 20 years to determine if another entry is needed to maintain structure.

Area 5: This area has a desired future condition of GEN. This a partial cut that is designed to treat the Douglas-fir and hemlock with poor live crown ratios and height to diameter ratio issues. This harvest will result in a mixed conifer stand with variable densities distributed across the area. Small patch cuts will be created with this prescription creating additional growing space. The need for reforestation in these areas will be determined after harvest. In 15 to 20 years this stand will be evaluated for future management opportunities and the desired future condition will be reassessed.

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.

Area 1: A partial cut will remove the hemlock, Douglas-fir and spruce less than 16" DBH due to height to diameter ratio issues. The remaining hemlock, Douglas-fir and alder will be thinned to a basal area range of 140ft² to 160 ft². (Approximately 20 ft² of alder will be targeted for retention). All other conifer and hardwood species will be reserved. A component of non-merchantable alder will

be left adjacent to residual conifer within the sale area. These prescriptions are designed to achieve variable densities throughout the area. Small patch cuts will be created with this harvest, creating additional growing space for understory development. The need for site preparation for planting is not anticipated in the small patches created by the removal of trees with poor height to diameter ratios, but will be evaluated after harvesting. Snag and down wood creation will be used in this area to create more diversity within this stand. Another partial cut is anticipated in 15 to 20 years in order to maintain or move this stand towards a LYR structure.

Area 2: A retention cut will remove a large portion of the merchantable alder and the merchantable hemlock will be thinned to a basal area range of 140ft² to 160 ft². All other species (conifer and hardwood) will be reserved. A component (3 to 5 trees per acre) of merchantable alder will be left in small clumps and a component of non-merchantable alder will be left adjacent to residual conifer within the sale area. A height limit may also be used to reserve intermediate trees that are providing vertical diversity. Unmanaged alder will also be left in stream buffers and headwalls. Following harvest, portions of this sale will 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, and Douglas-fir.

Area 3: A retention cut will remove a large portion of the merchantable alder and the merchantable Douglas-fir less than 24" DBH. All other species (conifer and hardwood) will be reserved. 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 will be treated for site preparation prior to planting. The openings and areas of low crown closure will be planted with a mix of conifer species.

Area 4: A partial cut will remove the hemlock and Douglas-fir less than 16" DBH in order to remove trees that have height to diameter ratio issues. The remaining hemlock and Douglas-fir will be thinned to an average basal area of 120ft² to 140 ft². A large portion of the merchantable alder will be removed. All other conifer and hardwood species will be reserved. A component (7 to 9 trees per acre) of merchantable alder will be left in small clumps and a component of non-merchantable alder will be left where feasible adjacent to residual conifer. Small patch cuts will be created with this harvest creating additional growing space for understory development. Site preparation for planting may be needed in the small patches created, but will be evaluated after harvesting.

Area 5: A partial cut will harvest all merchantable Douglas-fir, hemlock, and spruce less than 14" DBH to improve the stand health by removing trees with poor height to diameter ratios and poor live crown ratios. The remaining hemlock will be thinned to a basal area of 120ft² to 140 ft². All other conifer and hardwood are reserved. This area will have a stand density of 20% to 25% SDI, which will develop healthier larger trees and promote understory development. Small patch

cuts will be created with this prescription, creating additional growing space and creating variable densities within the area. The need for reforestation in these areas will be determined after harvest.

Green Tree, Down Wood and Snag Strategies

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

A variety of methods will be used to achieve green tree retention requirements. These residual green trees will supplement the future stand by promoting growth of dominant/co-dominant leave trees. Small non-merchantable hardwood and conifer will also be retained where possible. 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.

In Area 1, snag and down wood creation will be used to help achieve FMP targets in the future. During sale layout an assessment will be done in Area 2 to help determine if snag and down wood creation is appropriate at this entry. Due to the size of the trees in Area 3, it is unrealistic to expect that the snag and down wood goals in the FMP will be met with this operation. During sale layout an assessment will be done to help determine the best green tree retention prescription to help meet these goals in the future. A snag and down wood assessment will also be done on Area 4 during sale layout to determine the approximate level of snags in each of these areas and different options, such as snag creation, additional green tree retention, and future stand management and monitoring will be considered. An assessment will also be done in Area 5 to help determine if snag and down wood creation is appropriate at this entry.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%	0%	<input type="checkbox"/>	
Planned Quarter:		3	

	Conifer	Hardwood	Total
Net Volume (MBF)	3034	3196	6230
Stumpage Value (\$/MBF)*	\$132	\$198	
Estimated Gross Value	\$400,488	\$632,808	\$1,033,296
		Project Costs:	\$391,980
		Estimated Net Value:	\$641,316

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

VI. HARVESTING AND ACCESS CONSIDERATIONS:

The sale areas are accessed via Cook Creek Road, Anderson Creek Road, and Anderson Ridge Road. These are currently all weather crushed rock roads. See maps for specific road locations and conditions.

Approximately 2.0 miles of existing surfaced roads and 0.5 miles of legacy roads will be improved which includes grading, rocking, spot rocking, and potential sidecast pullback. This work will bring all roads up to standards described in *the Forest Roads Manual*.

Approximately 1.5 miles of road will be constructed in order to provide access to cable yarding areas. 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 (80%) and ground yarding (20%) 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				2.3
Improve			2.5	
Maintain ²	2	5.5		
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:

Anderson Creek is a Large Type F stream that is adjacent to the southern boundary of Areas 3 and 4. The Nehalem River is a Large Type F stream that is adjacent to the northern boundary of Area 5. There are approximately 7 known small perennial Type N streams located in the sale area. There are potentially additional Type N streams within the sale that have not been field identified at this time. All streams will be located, reviewed, and protected appropriately during sale layout based on flow, topography, and terrain.

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

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.

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 areas have been reviewed with the ODF Northwest Oregon Area Biologist.

It was determined that there is potential marbled murrelet habitat within and adjacent to the sale boundary. Surveys have been and will be conducted during the 2005 and 2006 survey season for marbled murrelets. All surveys for marbled murrelet were and will be conducted in accordance with Pacific Seabird Group (PSG) protocol. There were several murrelet detections adjacent to Areas 4, 5

and 6. A Marbled Murrelet Management Area (MMMA) will be designated after the 2006 survey season and the sale boundary will be modified to exclude any area that falls within the MMMA. The sale area is adjacent to Marbled Murrelet Management Areas (MMMA's). Seasonal restrictions will be required for some operations on this sale.

It was determined that there is potential northern spotted owl habitat within and adjacent to the sale boundary. Surveys have been and will be conducted during the 2005 and 2006 survey season for northern spotted owls. All northern spotted owl surveys were and will be conducted in accordance with USFWS endorsed protocol. At the completion of the 2005 survey season there have been no northern spotted owl detections.

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 bands of very steep slopes through out Areas 3 and 5, and near the bottom of Area 4, and to a lesser degree in Areas 1 and 2. There is a significant buffer between the operation and the streams below. The initial hazard and risk assessment from the geotechnical specialist is moderate for Areas 1, 2, 4 & 5 and high for Area 3. 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 Motorized in the *Tillamook State Forest Comprehensive Recreation Plan* (1993). This sale has been reviewed by the District Recreation Coordinator. No OHV trails were identified within or adjacent to the sale areas. Recreational use common to this area includes hiking, hunting, and OHV riding.

XI. CULTURAL RESOURCES:

The *Tillamook State Cultural Assessment* does not list any cultural sites within or adjacent to the proposed sale boundary.

XII. SCENIC RESOURCES:

The sale area has a visual classification of Level 2, medium sensitivity. The sale will be reviewed by the Public Use Coordinator to determine methods to minimize

visual impact. Area 4 and possibly Area 2 will be visible from Foss Road. There will be some visual impact for Areas 2 and 3 until green up occurs. The visual impact from areas 1, 4, and 5 will be minimal due to the number of residual trees that will be left.

XIII. OTHER RESOURCE CONSIDERATIONS:

There is a permanent plot and a reference point located in Area 3.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

These areas contain Focused Stewardship and Special Stewardship, Aquatic and Riparian Habitat. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.