

Pre-Operations Report

Operation Name: NW Combo

County: Tillamook

Management Basin: Wilson

Legal: Portions of Sections 18, 19, 20, 29 and 30 of T2N, R7W, W.M.

SAH Status: None

FDF: 100% CSL: 0%

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres ¹
1	Retention Cut	44	42
2	Modified Clearcut	113	110
3	Modified Clearcut	94	90
4	Modified Clearcut	113	112
5	Modified Clearcut	81	81
6	Partial Cut - Heavy	84	80
7	Modified Clearcut	20	19
Total		552	534

1. Net acres are based on orthophotos and GIS and exclude roads and stream buffers.

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

Slopes have a predominantly south to southeast and north to northeast aspects and range from 10-90+%. Elevations range from 1,000 feet to 3,000 feet. The soil types consist of Rye, Killam and Osweg.

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	207	DF, RA, WH	47	15	160	135	42	42
2	MC	208	DF, RA, WH	47	14	144	131	38	110
3	MC	209	DF, RA, WH,NF	47	12	190	232	53	90
4	MC	210	DF, RA, WH	47	13	192	196	52	112
5	MC	211	DF, RA, BM	47	13	188	196	51	81
6	PC	212	DF	47	17	200	123	45	80
	Target		DF		20	113	55	27	80
7	MC	213	RA, DF	47	12	180	240	55	19

1. The source of stand inventory information is from a timber cruise in 2009 and SLI.
2. The net acres are based on orthophotos and GIS and exclude roads, and stream buffers, reserve area 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. The directive for minor and major modifications will be followed for further review.

The entire sale area burned in the 1933 (Tillamook) fire and the 1945 (Wilson River / Salmonberry) fire. Areas 4 and 5 were seeded in 1959-60. Areas 1-3 were planted 1960-61 and Areas 6 and 7 were planted 1959-60.

Small portions of Area 7 were commercially thinned in the late 1990's. Stand Level Inventory (SLI) has been completed on portions of all the sale areas. Areas 1-4 are classified as Understory (UDS) and Areas 5-7 are classified as Closed Single Canopy (CSC). **See Table 2 for specific stand data.**

All Areas: 1 through 7

The average age of the stands in the sale is 47 years old. There are small differences in age due to the planting, seeding and inter-planting efforts.

Areas 1 through 6 are dominated by Douglas-fir with a scattering of hemlock trees and some noble fir trees at higher elevations. Area 7 and riparian areas are dominated by alder.

Douglas-fir in Areas 1 through 5 are overstocked and have small live crown ratios (25-35%) resulting in slowed diameter and height growth. Bear damage is also found in the stands resulting in some mortality and large amount of damage. The trees in Area 2-5 are also shorter and of lower quality.

Conifer in Area 6 is dense but overall is healthier and has more opportunity for multiple entry management.

Area 7 is dominated by alder with small patches of conifer commercially thinned in the late 1990's. Portions of the stand were aerially sprayed to release conifer, which resulted in short alder trees with multiple tops. Due to stand age and site quality, the alder in all areas have poor height and diameter growth.

The brush component in all the sale areas is comprised primarily of vine maple, huckleberry and sword fern. The vine maple and huckleberry occur primarily in gaps.

A timber cruise recorded 18 snags per acre in the sale areas. 41% were legacy snags from the Tillamook Burn and 59% are from bear kill and wind damage. The total down wood ranged from 2900-4000 cubic feet per acre in all decay classes.

SLI shows that in Areas 1, 2, 3 and 4 there is approximately 203 cubic feet per acre of down wood in decay class 1 and 2. The total down wood is over 5600 cubic feet per acre.

The down wood data for Areas 5 and 6 shows 108 cubic feet per acre in decay class 1 and 2. The stands have over 4800 cubic feet per acre of down wood in all decay classes.

III. DESIRED STAND CONDITION AND VISION:

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest ¹	Desired Future	Net Acres
1	207	UDS	REG	OFS	42
2	208	UDS	REG	LYR	31
				OFS	79
3	209	UDS	REG	LYR	90
4	210	UDS	REG	GEN	111
				LYR	1
5	211	CSC	REG	OFS	81
6	212	CSC	UDS	OFS	80
7	213	CSC	REG	OFS	19

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 (DFC) goals.

This sale is located in the West Fork of the Wilson sub-basin. In the last 5-10 years, the sub-basin has had some commercial thinning operations. The sale area has some difficult access which has limited past operations. The next 5-10 years will likely result in additional operations, both clearcut and partial cut along the road system. The West Mill sale in the 2009 AOP is located in the same sub-basin.

Desired Future Condition

Areas 1, 5, 6, 7 -The DFC is OFS.

Areas 2 – The DFC is 1/3 LYR and 2/3 OFS

Area 3 – The DFC is LYR

Area 4 – The designation for this area is GEN.

Areas 1 through 5 and 7

Short Term Vision: To remove slow growing Douglas-fir and alder with small crowns and reforest with mixed conifer species. Larger diameter conifer will be left in clumps and scattered across the harvest units adding to future stands as large legacy trees, snags and/or down wood sources.

Long Term Vision: To create and manage a mixed species stand with multiple entries partial cuts. Density management will occur between ages 12-15 through precommercial thinning, and first entry thinning around age 35. Due to terrain and long reaches in some portions of Areas 2-5 and 7, gap cuts or heavier first entry partial cut might be used to create structure over the long term.

Area 6

Short Term Vision:

The short term vision for Area 6 is to partial cut the stand to reduce density and continue growth of the healthy stand. The first entry thinning will keep the stands on the pathway toward more complex structure and increase individual tree growth.

Long Term Vision: Area 6 will be managed through multiple entry partial cuts or gap cuts to create a second cohort in the stand over time. The increased growing space will not only create a second cohort but also increase shrub growth adding to vertical and horizontal diversity.

IV. PROPOSED MANAGEMENT PRESCRIPTION AND 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.

Retention Cut: Area 1

Prescription: Merchantable Douglas-fir and alder will be removed. All other species will be reserved.

Green Trees: The largest diameter Douglas-fir and all other conifer trees will be reserved in the harvest units. On average the leave trees will number 13 per acre with a DBH of 21” occurring as scattered trees or in clumps.

Snags:

Small non-merchantable hardwood will be retained where possible in harvest units with the expectation they will become short term snags.

In addition, two Douglas-fir trees per acre with a DBH of 24” and greater will be reserved for snag creation. Snags will be created by girdling or topping at 60 feet.

Down Wood:

Four additional conifer trees per acre will be reserved for down wood creation. Two Douglas-fir trees per acre with a DBH of 24” and greater will be reserved and felled to create down wood and two additional conifers will be left to supplement future down wood levels. Tops resulting from ground yarding will also be left in the unit. In addition, small non-merchantable hardwood and conifer will be retained where possible with the expectation they will become short term down wood or persist to become larger trees for future down wood. Existing snags that are identified as a safety hazard will be felled and left for down wood. Additional down wood recruitment is expected through wind throw of residual trees.

Pathway: The area will be reforested with a mixture of conifer species: western hemlock, SNC tolerant Douglas-fir, western red cedar and/or noble fir. A minor component of other conifer species will be scattered across the area and alder will be retained in stream buffers. A precommercial thinning is anticipated at 12 to 17 years when the crowns begin to close. A commercial thinning will then be planned at age 35 to 40. At this time managers will review density and stand health to decide on future management prescriptions to move this stand to OFS.

Modified Clearcut: Areas 2, 3, 5 and 7

Prescription: Merchantable Douglas-fir and alder will be removed. All other species will be reserved.

Green Tree

Other conifer species will be reserved on the sale area for green trees. Green trees will also be left outside the timber sale harvest areas. The sale areas are in steep rocky terrain with several HLHL sites. All sale areas are deeply dissected by high energy streams. Due to this terrain, all sale areas will have designated GTR areas outside of the harvest areas. The green trees will be left in the steep rocky terrain, HLHL sites, additional buffers between units and inaccessible sites adjacent to the sale. GTR areas will be made up of hardwood and conifer species.

Snags

Snags will be created with the timber sale by girdling at DBH in GTR areas. The trees targeted for snags will be larger than 15" DBH.

Down Wood

Additional down wood may be created in GTR areas. Conifer will be targeted that has a DBH of 22" or greater. There are not be many trees within the sale area or in GTR areas of this size, to create down wood. Additional review of appropriate location and number of trees to create for down wood will be reviewed during sale prep.

Pathway: The area will be reforested with a mixture of conifer species: western hemlock, SNC tolerant Douglas-fir, western red cedar and/or noble fir. A minor component of other conifer species will be scattered across the area and alder will be retained in stream buffers. A precommercial thinning is anticipated at 12 to 17 years when the crowns begin to close. A commercial thinning will then be planned at age 35 to 40. At this point, managers will review density and stand health in Areas 2, 3, 5, and 7 to decide on future management prescriptions to move these stands to LYR and OFS and to move Area 4 to UDS.

Partial Cut: Area 6

Prescription: Conifer will be thinned to a basal area of 110-130 square feet. Where the opportunity exist to select for minor conifer species like hemlock over Douglas-fir that will be implemented to create more species diversity in the stand. Alder and other hardwoods will be reserved.

Snags: No snags will be created at this entry as the SLI data shows snags scattered throughout the sale areas. There are snags and damaged trees caused from bears' peeling bark from the trees found throughout the sale. Where the snags are not a safety hazard they will be reserved from falling during operations. Creation of additional snags may occur when the stand is larger diameter, likely the second entry if they are needed.

Down Wood: Due to the current stand size there will be no down wood creation with this harvest. Snags that are felled will not be yarded and reserved toward down wood goals. In addition there will be a review of opportunities of long-butting bear damage defect and leaving it scattered in the harvest units. This strategy will be reviewed in more detail during sale prep.

Pathway: Area 6 will be ready for a second entry partial cut in 15-20 years. At the time of the next commercial entry diameter and species selection can be made to continue development of stand structure components like down wood, snags and minor conifer species. At some point in future entries, the establishment of second cohort must occur or be enhanced through gap cutting or releasing understory trees to move the stand to OFS.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%	0%		x
Planned Quarter:		3	

	Conifer	Hardwood	Total
Net Volume (MBF)	8,115	805	8,920
Stumpage Value (\$/MBF)*	\$211	\$200	
Estimated Gross Value	\$1,709,200	\$161,300	\$1,870,500
		Project Costs:	\$379,500
		Estimated Net Value:	\$1,491,000

**Combined Douglas-fir stumpage values based on harvest type. Additional conifer pulp volume is expected on this sale.*

VI. HARVESTING AND ACCESS CONSIDERATIONS:

The sale areas are accessed via the Cedar Creek road and Diamond Mill Road to North Fork Road to West Fork Road. They are currently an all weather, crushed rock roads. See maps for specific road locations and conditions.

Approximately 0.38 miles of road will be improved and 3.68 miles of new, rocked roads and 0.71 dirt spur roads will be constructed to provide access to cable and ground yarding areas.

Dirt roads will be closed at the end of operating season and/or the end of the sale. Following reforestation the remaining 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 road closure. No other project work is currently planned with this sale.

The operation will be 5% ground yarded and 95% cable yarded.

Table 5. Transportation Planning Summary (Miles)⁴

Activity	Mainline	Collector	Rocked Spur ¹	Dirt Spur ¹
Construct			1.24	0.71: Spurs 1A, 1B, 2A, 2B1,3A & 3B
Reconstruct			2.44	
Improve			0.38	
Maintain ²		6.6		

Close/Block ³				0.71: See above
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:

A watershed analysis is being conducted for the Wilson River basin at this time. Some portions of the operations would allow some in-stream work if this sub-basin is highlighted in the analysis. In addition, field reviews will occur to consider conversion of hardwoods or thinning in conifer dominated areas.

West Fork North Fork Wilson River is a verified, large Type F stream adjacent to the sale. There are additional unnamed small perennial and seasonal Type N streams within the sale areas. These streams will be reviewed and protected appropriately during sale layout based on flow, topography, and terrain. The inner and outer riparian zones of these Type N streams will be managed towards mature forest condition.

The Oregon Department of Fish and Wildlife (ODFW) will be requested to complete stream surveys prior to sale layout. Streams of unknown status or assumed fish 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.

Refer to Aquatic Resource Protection Strategies in the Summary document for information on in the “in stream work period’ road work and stream improvement projects.

VIII. T&E SPECIES CONSIDERATIONS:

The sale areas have been reviewed with the ODF Northwest Oregon Area Biologist. Surveys for marbled murrelets due to the absence of potentially suitable habitat. The sale is located in the interior of the Tillamook Burn and by policy surveys were not required for Northern Spotted Owls.

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:

This assessment is based on analysis of USGS 1:24,000 topographic maps.

There are high landslide hazard locations scattered throughout the sale. Areas 1, 2, 3, 4, and portions of Area 5 drain into Rogers Creek and unnamed tributaries. The southern portion of Area 5 and Areas 6 and 7 drain into the West Fork of the North Fork of the Wilson River. The risk of landslides delivering directly from Areas 1 and 4 to Rogers Creek and unnamed tributaries is moderate to high. The risk of landslides delivering from the rest of the sale areas to all of the streams is high. Portions of Areas 1, 3, 4, 5, 6, and 7 appear to be located on large, deep-seated landslide landforms.

The geotechnical specialist will be consulted if evidence of recent landslide activity is identified during sale layout.

X. RECREATION RESOURCES:

The sale areas are designated as Motorized in the *Tillamook State Forest Comprehensive Recreation Plan* (1993). No OHV trails were identified within or adjacent to the sale areas. This sale has been reviewed by the District Recreation Coordinator.

XI. CULTURAL RESOURCES:

The *Tillamook State Cultural Assessment* does not list any cultural sites within the proposed sale boundary. If any sites are identified, the Public Use Coordinator will be contacted.

XII. SCENIC RESOURCES:

The sale areas have a visual classification of Level 3, low sensitivity. No scenic impact is expected.

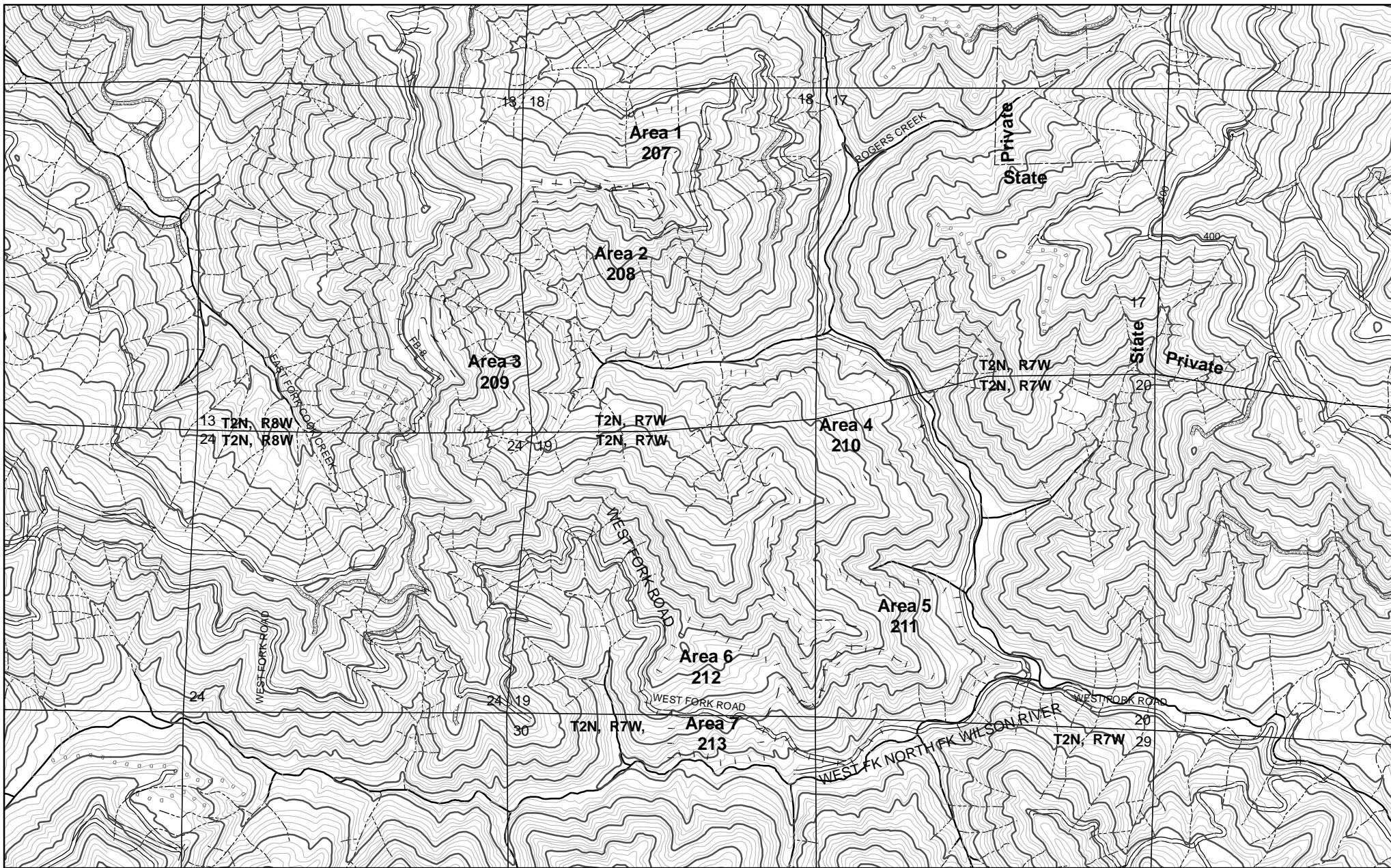
XIII. OTHER RESOURCE CONSIDERATIONS:

A permanent inventory plot is located within the sale area. Permanent plot markings will be protected according to the guidelines. In addition, two Swiss needle cast research plots are with the sale and will be protected during operations.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

The sale areas contain Focused and Stewardship, Aquatic and Riparian Habitat. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized. In addition portions of Area 2 are designated as Operationally Limited in LMCS. Some areas will be harvested through to reach higher stocked areas on the lower slope.

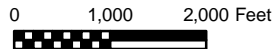
Boundary lines depicted on Attachment C are approximate; exact locations and site specific management activities will be determined during the sale preparation process.



- Contour Interval 40'
- Area boundary
 - ! ! Sale boundary
 - Ownership boundary
 - Perennial Type-F stream*
 - Perennial Type-N stream*
 - == Unsurfaced road
 - Surfaced road
 - State/Federal highway

- Legacy road
- o o o Blocked road
- - Road construction
- County road
- ; ; Transmission line

3



**NW Combo
-- Topography --
2009 SALE PLAN
TILLAMOOK DISTRICT**

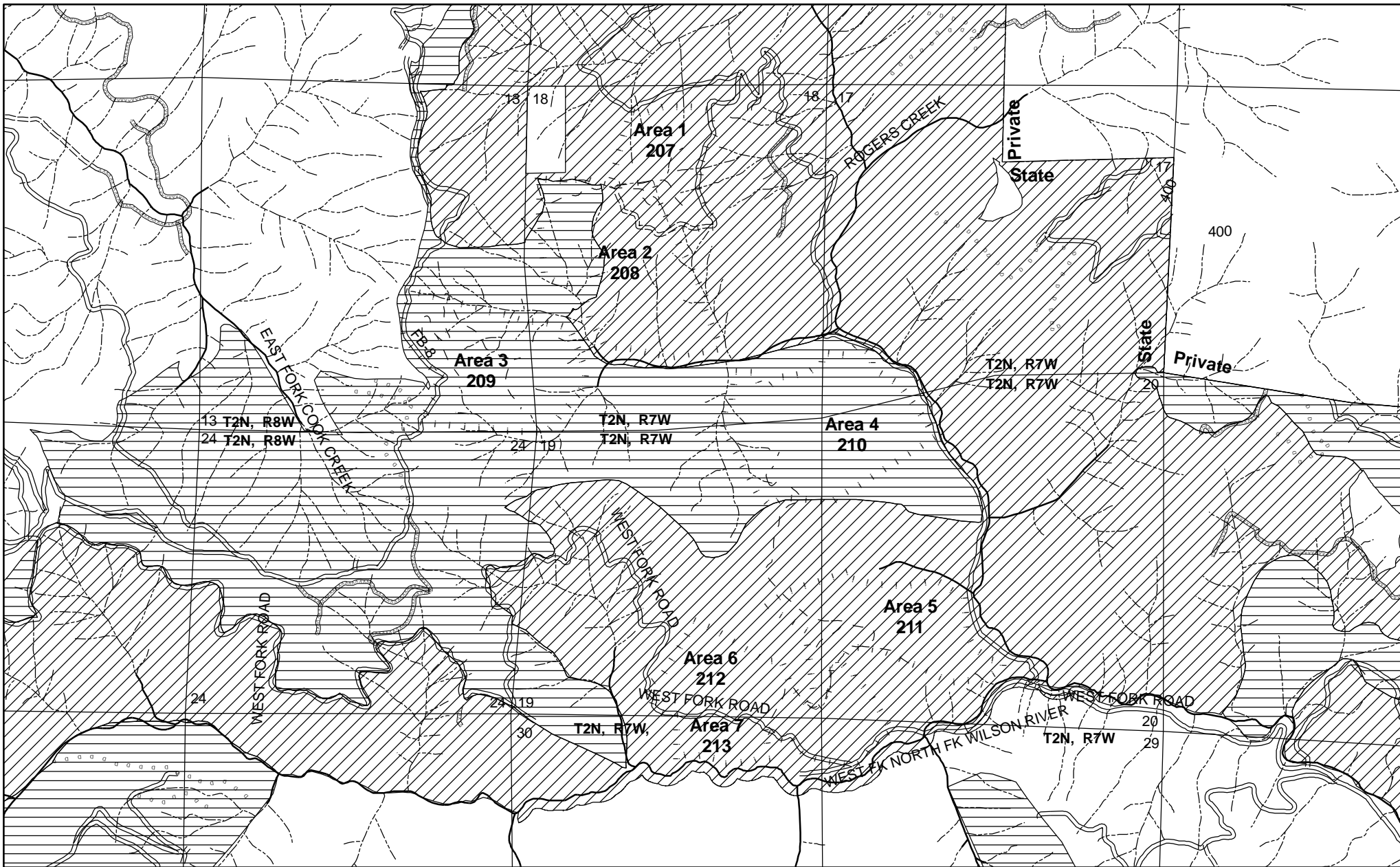
Portions of Sections 17,18,19,20,29 and 30
T2N, R7W, W.M.,
Portions of Section 24
T2N, R8W, W.M.,
Tillamook County, Oregon

*Streams of unknown fish presence are not shown but will be surveyed prior to the sale

Tillamook District GIS
10/24/2007

This product is for informational use and may not have been prepared for, or suitable for legal, engineering, or surveying purposes.

Area	Type of Operation
1	Partial Cut
2	Modified Clearcut
3	Modified Clearcut
4	Modified Clearcut
5	Modified Clearcut
6	Partial Cut
7	Modified Clearcut



Desired future condition

- Layered
- Older forest

- Area boundary
- Sale boundary
- Ownership boundary
- Perennial Type-F stream*
- Perennial Type-N stream*
- Unsurfaced road
- Surfaced road
- State/Federal highway

- Legacy road
- Blocked road
- Road construction
- County road
- Transmission line



3

Portions of Sections 17, 18, 19, 20, 29 and 30
 T2N, R7W, W.M.,
 Portions of Section 24
 T2N, R8W, W.M.,
 Tillamook County, Oregon

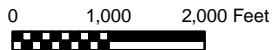
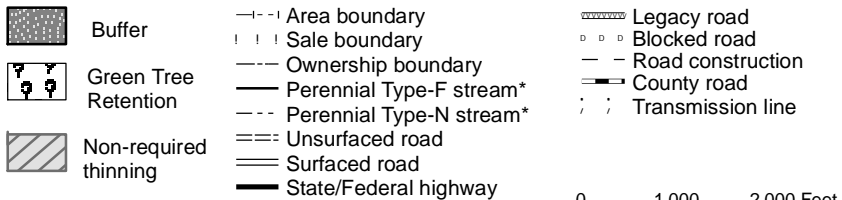
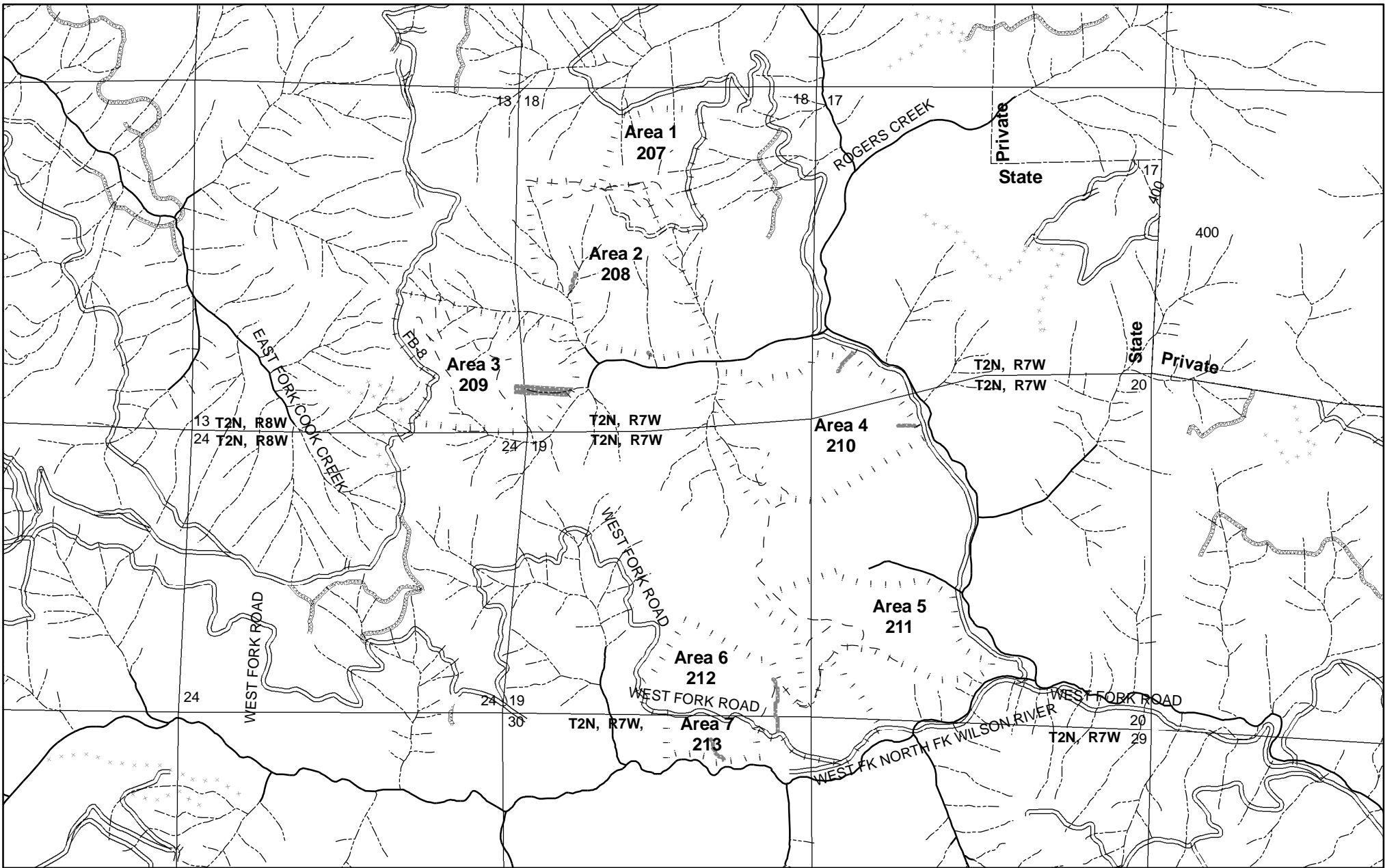
NW Combo
-- Current and Future Condition --
2009 SALE PLAN
TILLAMOOK DISTRICT

*Streams of unknown fish presence are not shown but will be surveyed prior to the sale

Tillamook District GIS
 01/08/2008

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Area	Type of Operation
1	Partial Cut
2	Modified Clearcut
3	Modified Clearcut
4	Modified Clearcut
5	Modified Clearcut
6	Partial Cut
7	Modified Clearcut



3

**NW Combo
-- Key Resources --
2009 SALE PLAN
TILLAMOOK DISTRICT**
Portions of Sections 17,18,19,20,29 and 30
T2N, R7W, W.M.,
Portions of Section 24
T2N, R8W, W.M.,
Tillamook County, Oregon

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01/08/2008
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Area	Type of Operation
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7	Modified Clearcut