



Timber Sale Appraisal Cost Summary Fox Ridge Thin Sale 341-03-22

"STEWARDSHIP IN FORESTRY"

District: Tillamook

Date: 10/3/02

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$251,833.68	\$0.00	\$251,833.68
		Project Work	\$0.00
		Advertised Value	\$251,833.68



Timber Sale Appraisal Timber Description Fox Ridge Thin Sale 341-03-22

"STEWARDSHIP IN FORESTRY"

District: Tillamook

Location: Secs 3,4 & 5, T1S, R7W
Secs 31 & 32, T1N, R7W

Date: 10/3/02

Stand Stocking: 20%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	15	0	95
Western Hemlock / Fir	13	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Total
2S	73	0	73
3S	764	607	1,371
4S	229	151	380
Total	1,066	758	1,824

Comments: Pond Values Used: 3rd Quarter 2002

Other Costs (P&R included): Total: \$15,160

Non-project roads: machine work: 43 stations x \$170/sta = \$7310

Pit-run Rock: 1,200 cubic yards @ \$6/cy = \$7,200

Move-in cost: \$650

Other costs (P&R to be applied): Total: \$5,128

Brand and paint: \$2/MBF x 1,824MBF = \$3,648

Clear slash from OHV trails: 3,700 feet @ \$0.40/ft = \$1,480

Road Maintenance: Total: \$5.26

Grading: \$500/mile x 6 miles x 2 times / 1824MBF = \$3.29

Surfacing: 50 cubic yards @ \$6/cy x 2MMBF x 6 miles / 1824MBF = \$1.97

Hardwood pond value of \$475/MBF was obtained from Northwest Hardwoods in June 2002.

Hardwood stumpage: \$475/MBF - \$285.83 logging cost = \$189.17/MBF



Timber Sale Appraisal

Logging Conditions

Fox Ridge Thin

Sale 341-03-22

"STEWARDSHIP IN FORESTRY"

Combination#: 1	Douglas - Fir	61.83%	
	Western Hemlock / Fir	87.25%	
Yarding Distance:	Medium (800 ft)		Downhill Yarding: No
Logging System:	Cable: Medium Tower >40 - <70		Process: Manual Delimiting
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	5		Bd. Ft./Load: 3,500
Cost/MBF:	\$189.52		
Machines:	Log Loader (A) Tower Yarder (Medium)		
Combination#: 2	Douglas - Fir	23.49%	
Yarding Distance:	Medium (800 ft)		Downhill Yarding: No
Logging System:	Cable: Medium Tower >40 - <70		Process: Manual Delimiting
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	7		Bd. Ft./Load: 3,500
Cost/MBF:	\$135.37		
Machines:	Log Loader (A) Tower Yarder (Medium)		
Combination#: 3	Douglas - Fir	5.99%	
	Western Hemlock / Fir	12.75%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: Yes
Logging System:	Track Skidder		Process: Manual Falling/Delimiting
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	6		Bd. Ft./Load: 3,500
Cost/MBF:	\$155.50		
Machines:	Log Loader (B) Track Skidder		
Combination#: 4	Douglas - Fir	8.69%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: Yes
Logging System:	Track Skidder		Process: Manual Falling/Delimiting
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	8		Bd. Ft./Load: 3,500
Cost/MBF:	\$116.62		
Machines:	Log Loader (B) Track Skidder		



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal

Logging Costs

Fox Ridge Thin

Sale 341-03-22

Date: 10/3/02

Operating Seasons: 1.0

Profit & Risk: 20%

Project Costs: \$0

Other Costs (P/R): \$5,128

Slash Disposal: \$0

Other Costs: \$15,160

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Road Maintenance: \$5.26

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	2.0	3.5
Western Hemlock / Fir	\$0.00	4.0	3.5



Timber Sale Appraisal Logging Costs Breakdown Fox Ridge Thin Sale 341-03-22

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Western Hemlock / Fir
Logging	168.43	185.18
Road Maintenance	5.54	5.54
Fire Protection	1.49	1.49
Hauling	69.16	34.58
Other (P/R appl.)	2.81	2.81
Profit & Risk	49.49	45.92
Slash Disposal	0.00	0.00
Scaling	2.00	2.00
Other	8.31	8.31
Total	307.23	285.83

Amortization	0.00	0.00
Pond Value	508.48	335.04
Stumpage	201.25	49.21
Amortized	0.00	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Fox Ridge Thin Sale 341-03-22

Amortized

	Douglas - Fir	Western Hemlock / Fir
MBF	0.00	0.00
Value	0.00	0.00
Total	0.00	0.00

Unamortized

	Douglas - Fir	Western Hemlock / Fir
MBF	1,066.00	758.00
Value	201.25	49.21
Total	214,532.50	37,301.18

Gross Timber Sale Value

Recovery \$251,833.68

Prepared by: Bob Gustavson

Date: 10/3/02

District: Tillamook

Phone: (503) 842-2545



**OREGON DEPARTMENT OF FORESTRY
CRUISE REPORT**

Fox Ridge Thin

1. **Type of Sale:** Thinning/Clearcut – Recovery
2. **Legal Description:** Portions of Sections 3, 4, and 5, T1S, R7W, and Sections 31 and 32, T1N, R7W, W.M., Tillamook County, Oregon.
3. **Sale Acreage:** The sale boundaries were plotted on a digital orthophotograph and the acreage was calculated with GIS.

	ACRES		
	<u>Sale</u>	<u>Total</u>	<u>Net</u>
Area 1 (Partial Cut)	82	60	60
Area 2 (Partial Cut)	37	28	28
Area 3 (Partial Cut)	22	15	15
Area 4 (Clearcut)	23	25	22

Sale Acres: *Area within the Timber Sale Boundary signs.*

Total acres: *For accomplishment reporting*

Clearcut harvest: Sale acres; plus green tree retention acres outside the sale boundary; less roads and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

Partial Cut: Sale acres less areas of low stocking, hardwoods, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

Net acres: *Used for calculating the advertised volume.*

Clearcut: Sale acres; less green tree retention, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

Partial Cut: Same as total acres

4. **Cruising Procedures:**
 - A. **Cruising Method:** Areas 1, 2, and 3 - A total of 34 variable radius full point plots were established on these sale areas. Eighteen conifer trees representative of take trees were measured for VBAR and grade during the cruise. Assignment of grades is similar to results from previous cruises in similar size timber.

On Area 4, 20 variable radius full point plots were established. Nine of these plots were measured and graded in order to obtain a v-bar for volume calculations. The remainder were count only plots.
 - B. **Plot Size:** A basal area factor of 20 was used. The point of conifer tree observation was at 4.5 feet.

- C. **Diameter Standards:** All conifer diameters were measured at a height of 4.5 feet to the nearest 1". Diameters under 8" were not recorded.
- D. **Grading System:** Conifers were not graded on Areas 1, 2, and 3 during the cruise. Assignment of grades was based on results from previous cruises in similar size timber. On Area 4, the segment grading system was used following the Columbia River Log Scaling and Grading Bureau rules.
5. **Computation Procedures:** Basal area and density information was calculated from plot data taken. On Areas 1, 2, and 3 the residual basal area for the sale is to be within the range of 120 to 140 square feet per acre. For computation purposes the sale volume was calculated using a residual basal area of 120 square feet. On Area 4, Plot data was entered into SuperAce for volume calculations. Douglas-fir volume calculation was based on removal of all the basal area. V-BAR (Volume-Basal Area Ratio) for the take trees was computed using information from measurements made from trees within the sale areas. (see attached Volume Computation Summary). On Area 4, the coefficient of variation for Douglas-fir was 39.7% and the standard error was 8.9% for board foot measure.
6. **Defect and Breakage:** A 5% reduction was applied to the cruise volumes for defect and breakage.
7. **Timber Description:** The sale areas burned in the 1933 and 1939 Tillamook fires. Areas 1, 2 and 3 are 48 to 50 year-old natural stands of Douglas-fir and hemlock with scattered alder. Area 4 is a 40 year-old planted Douglas-fir stand that has not been pre-commercially thinned. The Douglas-fir is severely infected with Swiss needle cast with 1 to 2 years needle retention. Current stand characteristics are shown on the attached stand table.
8. **Cruiser Names / Dates:** Robert Shaver, Steve Langer, Tim Holliday. August, September, 2001.
9. **Revenue Distribution:**
100% FDF
Tax Code: 9-2
Deed No. 159, 161
60% Rehabilitation Obligated
10. **Attachments:**
- Volume Computation Summary
 - Stand Table
 - Logging Plan/Thinning Acres



"STEWARDSHIP IN FORESTRY"

Fox Ridge Thin

Volume Summary

Area 1							
60 acres							
SPECIES	QMD	Basal Area per acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	16"	45	128	5.8	348	5%	331
Hemlock	13"	77	124	9.5	570	5%	542
TOTAL				15.3	918		873

Area 2							
28 acres							
SPECIES	QMD	Basal Area per acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	16"	96	128	12.3	344	5%	327
Hemlock	14"	36	124	4.5	126	5%	139
TOTAL				16.8	470		466

Area 3							
15 acres							
SPECIES	QMD	Basal Area per acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	14"	53	85	4.5	68	5%	65
Hemlock	13"	55	99	5.4	81	5%	77
TOTAL				9.9	149		142

Area 4							
22 acres							
SPECIES	QMD	Basal Area per acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	12"	126	130	16.4	361	5%	343
TOTAL				16.4	361		343

TOTAL ACRES 125		
SPECIES	MBF	Net Vol. (MBF)
Douglas-fir	1121	1066
Hemlock	777	758
TOTAL	1898	1824

Fox Ridge Thin

Area 1

Expected BA - 120

DBH	Total Tk trs/acre	Total Lv trs/acre	Douglas-fir Tk tr/acre	Douglas-fir Lv tr/acre	Hemlock Tk tr/acre	Hemlock Lv tr/acre
8"	0.0	0.0	0.0	0.0	0.0	0.0
9"	0.0	0.0	0.0	0.0	0.0	0.0
10"	21.6	0.0	6.2	0.0	15.4	0.0
11"	0.0	0.0	0.0	0.0	0.0	0.0
12"	32.5	0.0	2.2	0.0	30.3	0.0
13"	0.0	0.0	0.0	0.0	0.0	0.0
14"	33.3	4.8	7.9	0.0	25.3	4.8
15"	0.0	0.0	0.0	0.0	0.0	0.0
16"	11.7	9.3	3.5	1.2	8.2	8.17
18"	2.8	8.3	2.8	1.8	0.0	6.4
20"	6.0	9.0	4.5	6.8	1.5	2.3
22"	4.0	8.3	2.7	6.0	1.3	2.0
24"	1.5	8.5	1.5	5.0	0.0	3.5
26"	0.0	2.9	0.0	2.9	0.0	0.0
28"	0.0	1.7	0.0	1.7	0.0	0.0
30"	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0
Total	113.3	52.7	31.2	25.3	82.1	27.1

TOTAL STAND

BA/acre	242
Lv BA/ac	120
Tk BA/ac	122
RD total	60

Current Ave Stand Diameter	16.3
Leave Stand - QM Diameter	20.5
Take trees - QM Diameter	14.0
RD expected	27

Douglas-fir	BA	QMD
Total	115	19.3
Leave	70	22.5
Take	45	16.3

Hemlock	BA	QMD
Total	127	14.6
Leave	50	18.4
Take	77	13.1

Douglas-fir	
Stand Density Index	27
SDI - Expected	15

Hemlock	
Stand Density Index	25
SDI - Expected	9

Fox Ridge Thin

Area 2

Expected BA - 120

DBH	Total Tk trs/acre	Total Lv trs/acre	Douglas-fir Tk tr/acre	Douglas-fir Lv tr/acre	Hemlock Tk tr/acre	Hemlock Lv tr/acre
8"	0.0	0.0	0.0	0.0	0.0	0.0
9"	0.0	0.0	0.0	0.0	0.0	0.0
10"	20.2	0.0	10.1	0.0	10.1	0.0
11"	0.0	0.0	0.0	0.0	0.0	0.0
12"	21.3	0.0	14.2	0.0	7.1	0.0
13"	0.0	0.0	0.0	0.0	0.0	0.0
14"	19.0	1.7	12.1	1.7	6.9	0.0
15"	0.0	0.0	0.0	0.0	0.0	0.0
16"	20.4	5.1	14.0	2.5	6.4	2.55
18"	11.0	5.0	9.0	3.0	2.0	2.0
20"	9.0	1.6	7.4	0.8	1.6	0.8
22"	5.8	8.8	5.1	8.0	0.7	0.0
24"	0.5	12.0	0.5	12.0	0.0	0.0
26"	0.0	5.0	0.0	5.0	0.0	0.0
28"	0.0	4.5	0.0	4.1	0.0	0.5
30"	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0
Total	107.2	43.8	72.4	37.2	34.8	5.8

TOTAL STAND

BA/acre	253
Lv BA/ac	120
Tk BA/ac	133
RD Total	60

Current Ave Stand Diameter	17.5
Leave Stand - QM Diameter	22.6
Take trees - QM Diameter	15.1
Relative Density -expected	25

Douglas-fir	BA	QMD
Total	205	18.5
Leave	109	23.2
Take	96	15.6

Hemlock	BA	QMD
Total	47	14.6
Leave	11	18.5
Take	36	13.8

Douglas-fir	
Stand Density Index	49
SDI - Expected	24

Hemlock	
Stand Density Index	9
SDI - Expected	2

Fox Ridge Thin

Area 3

Expected BA - 120

DBH	Total Tk trs/acre	Total Lv trs/acre	Douglas-fir Tk tr/acre	Douglas-fir Lv tr/acre	Hemlock Tk tr/acre	Hemlock Lv tr/acre
8"	0.0	0.0	0.0	0.0	0.0	0.0
9"	0.0	0.0	0.0	0.0	0.0	0.0
10"	40.4	0.0	13.5	0.0	26.9	0.0
11"	0.0	0.0	0.0	0.0	0.0	0.0
12"	28.4	7.1	18.9	4.7	9.5	2.4
13"	0.0	0.0	0.0	0.0	0.0	0.0
14"	12.1	3.5	5.2	3.5	6.9	0.0
15"	0.0	0.0	0.0	0.0	0.0	0.0
16"	16.5	5.1	8.9	5.1	7.6	0.00
18"	7.0	11.0	4.0	9.0	3.0	2.0
20"	2.5	6.5	0.8	4.1	1.6	2.5
22"	2.9	5.4	0.7	2.9	2.2	7.3
24"	0.5	5.5	0.5	2.7	0.0	2.7
26"	0.0	5.9	0.0	4.1	0.0	1.8
28"	0.0	0.5	0.0	0.5	0.0	0.0
30"	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0
Total	110.3	50.4	52.5	36.5	57.7	18.6

TOTAL STAND

BA/acre	227
Lv BA/ac	120
Tk BA/ac	107
RD total	57

Current Ave Stand Diameter	16.1
Leave Stand - QM Diameter	20.0
Take trees - QM Diameter	13.4
Relative Density expected	27

Douglas-fir	BA	QMD
Total	127	16.2
Leave	75	19.3
Take	53	13.6

Hemlock	BA	QMD
Total	100	15.5
Leave	45	21.1
Take	55	13.2

Douglas-fir	
Stand Density Index	32
SDI - Expected	17

Hemlock	
Stand Density Index	19
SDI - Expected	8

Volume Relationships by Species

Report:
Atterbury Consultants, Inc.

Page: 1
7/12/02 9:36:06A

State	County	Project	Twn	Rng	Sec	Tract	Type No.	Acres
		FOX RIDGE <i>Area 4</i>						1.00

Species								
Item	Total	DF	RA					
Total Gross Cunits	38	37	1					
Total Net Cunits	38	37	1					
Total Gross MBF	17	16	1					
Total Net MBF	17	16	1					
Total Tons	115	115						
BA / Acre	136.00	126.00 *	10.00					
Trees / Acre	178.390	161.297	17.093					
QM DBH	11.8	12.0 *	10.4					
Gross CuFt / Acre	3,838	3,698	140					
Net CuFt / Acre	3,838	3,698	140					
Net / Gross Ratio	1.000	1.000	1.000					
Gross BdFt / Acre	17,013	16,437	576					
Net BdFt / Acre	17,013	16,437	576					
Net / Gross Ratio	1.000	1.000	1.000					
Tons / Acre	115	115						
Logs Per Acre	258	246	12					
Avg Log Length	27.5	31.0	24.0					
Lineal Ft Per Acre	7,102	7,624	296					
G CuFt / SqFt BA	28.2	29.4	14.0					
N CuFt / SqFt BA	28.2	29.3	14.0					
G BdFt / SqFt BA	125.1	130.5	57.6					
N BdFt / SqFt BA	125.1	130.5 *	57.6					
Tons / SqFt BA	0.85	0.91						
G CuFt / G MBF	226	225	243					
N CuFt / N MBF	226	225	243					
G BdFt / G CuFt	4.43	4.44	4.11					
N Bdft / N CuFt	4.43	4.44	4.11					
Tons / G CCF	3.00	3.11						
Tons / G MBF	6.77	7.01						
Lbs / G CuFt	60.02	62.29						
Lbs / N BdFt	13.54	14.02						
N CuFt / Lineal Ft	0.54	0.49	0.47					
N BdFt / Lineal Ft	2.40	2.16	1.95					
Lbs / Lineal Ft	32.44	30.22						

* VALUES USED IN VOLUME SUMMARY

Stand Table Summary

Project **FOXBRIDGE** *AREA 4*

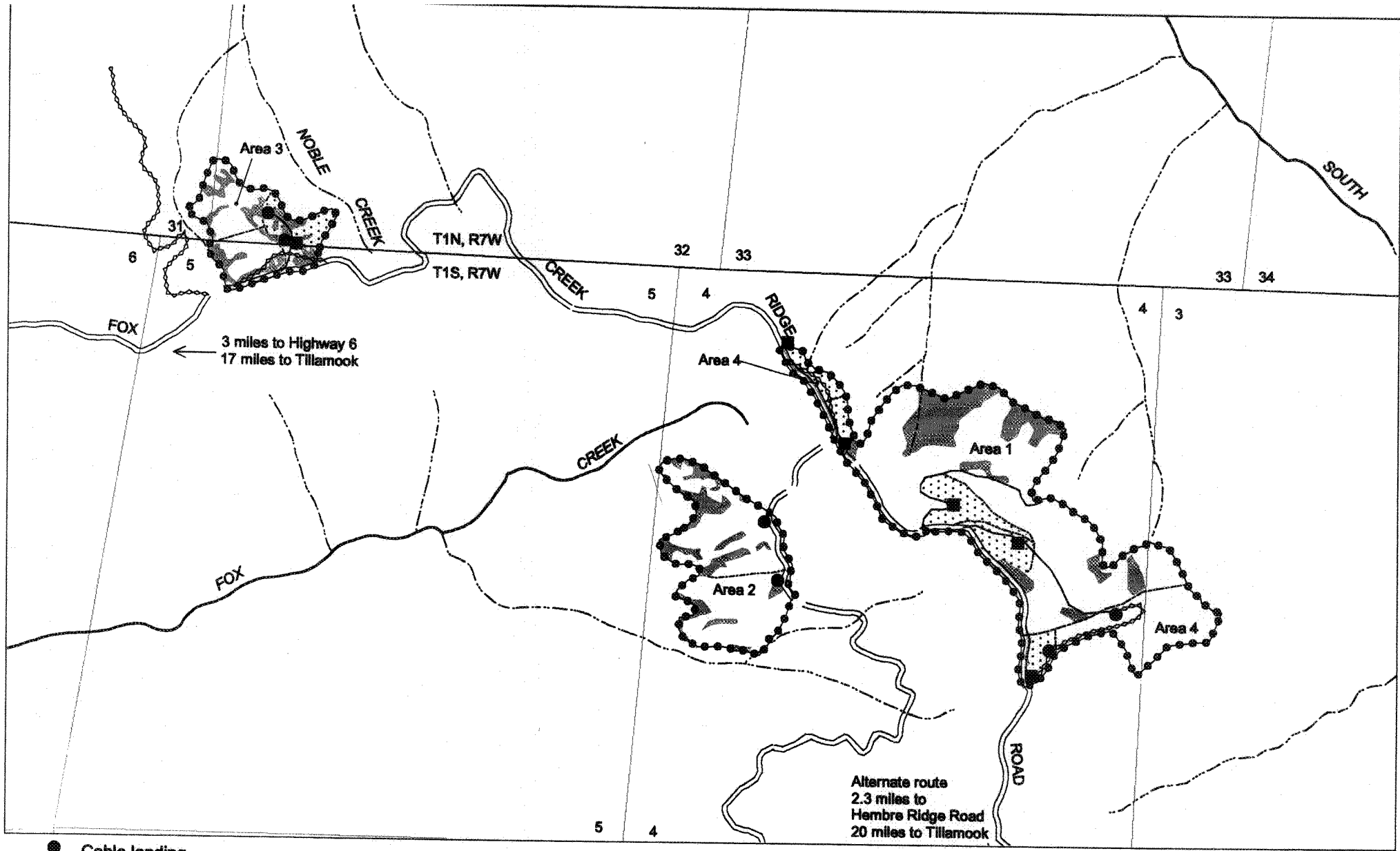
TT1N RR7W S04 T0001

TT1N RR7W S04 T0001

Twp Rge Sec Tract Type Acres Plots Sample Trees
T1N R7W 04 TILLAMOOK 0001 1.00 20 61

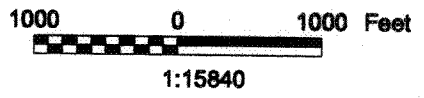
Page: 1
Date: 7/12/02
Time: 9:34:19AM

Spc	T	Sample			Av Ht	Trees/ BA/ Logs			Average Log		Net		Net		Totals		
		DBH	Trees	16		Tot	Acres	Acres	Acres	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acres	Cu.Ft. Acres	Bd.Ft. Acres	Tons	Cunits	MBF
DF		8	3	87	50	19.689	6.87	13.13	4.4	25.0	1.98	58	328	2	1	0	
DF		9	4	91	90	20.742	9.16	25.93	8.9	50.0	7.70	232	1,296	8	2	1	
DF		10	5	90	84	21.002	11.45	29.40	9.3	44.3	8.91	274	1,302	9	3	1	
DF		11	8	90	97	27.771	18.33	41.66	12.0	52.5	15.99	500	2,187	16	5	2	
DF		12	9	92	101	26.252	20.62	52.50	12.8	57.2	21.11	670	3,004	21	7	3	
DF		13	3	92	84	7.456	6.87	12.43	16.5	72.0	6.38	205	895	6	2	1	
DF		14	5	91	88	10.715	11.45	19.29	18.5	76.7	10.98	357	1,479	11	4	1	
DF		15	8	92	97	14.934	18.33	26.14	22.0	95.7	17.56	576	2,502	18	6	3	
DF		16	3	89	103	4.922	6.87	9.84	25.7	108.3	7.67	253	1,066	8	3	1	
DF		18	2	93	99	2.593	4.58	5.19	31.7	135.0	4.90	164	700	5	2	1	
DF		19	2	95	92	2.327	4.58	4.65	32.8	132.5	4.53	153	617	5	2	1	
DF		20	2	91	104	2.100	4.58	4.20	40.2	167.5	4.98	169	704	5	2	1	
DF		23	1	87	112	.794	2.29	1.59	54.4	225.0	2.52	86	357	3	1	0	
DF		Totals	55	91	88	161.297	126.00	245.94	15.0	66.8	115.19	3,698	16,437	115	37	16	
RA		8	1	88	17	4.775	1.67										
RA		10	2	89	59	6.112	3.33	6.11	8.1	40.0		50	244		0	0	
RA		11	1	91	44	2.525	1.67	2.53	10.3	40.0		26	101		0	0	
RA		12	1	92	49	2.122	1.67	2.12	14.1	50.0		30	106		0	0	
RA		14	1	93	54	1.559	1.67	1.56	22.2	80.0		35	125		0	0	
RA		Totals	6	90	43	17.093	10.00	12.32	11.4	46.8		140	576		1	1	
Totals			61	90	84	178.390	136.00	258.26	14.9	65.9	115.19	3838	17,013	115	38	17	



- | | |
|-----------------------------|---------------------------|
| ● Cable landing | — Type-F stream |
| ■ Tractor landing | - - - Type-N stream |
| □ Cable yarding | == Surfaced road |
| ▨ Ground yarding | --- Unsurfaced road |
| ▩ Non-required thinning | — State highway |
| ⌞ Green tree retention area | — County road |
| - - - Setting boundary | — Non-project road |
| - - - Area boundary | - - - Swing road |
| ●●● Timber sale boundary | — Abandoned road |
| | ○-○-○ OHV trail |
| | - - - Non-motorized trail |

LOGGING PLAN
 Timber sale contract 341-03-22
 Fox Ridge Thin
 Sections 31 and 32, T1N, R7W,
 Sections 3, 4, and 5, T1S, R7W, W.M.
 Tillamook County, Oregon



OREGON DEPARTMENT OF FORESTRY
WRITTEN PLAN

SALE NAME: Fox Ridge Thin

PROTECTED RESOURCE: No High Risk Sites were identified on the sale areas. If active landslides and slumps; slopes steeper than 80%; headwalls or draws steeper than 70% are found that constitute a High Risk Site the following practices will apply.

LOCATION: Portions of Sections 31 & 32, T1N, R7W, and Sections 3, 4, & 5, T1S, R7W, W.M., Tillamook County, Oregon.

ACTIVITY: Cable yarding across or adjacent to High Risk Sites.

PROTECTION MEASURES:

YARDING:

- Logs will have at least one end suspended when yarding through high risk sites.
- Soil gouging will be limited to a depth of 1 foot (measured vertically) when yarding through high risk sites.

PREPARED BY: Steve Langer
South Unit Forester
March 22, 2002