



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Ruffer
Sale KL-341-2019-W00501-01

District: Klamath/Lake

Date: January 10, 2020

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$274,400.03	\$0.00	\$274,400.03
		Project Work:	(\$38,410.85)
		Advertised Value:	\$235,989.18



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Ruffer

Sale KL-341-2019-W00501-01

District: Klamath/Lake

Date: January 10, 2020

Timber Description

Location: Township 40S, Range 7E, Portions of Section 10, 14, and 15, Willamette Meridian, Klamath County, OR

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	19	0	95
White Fir	12	0	98
Sugar Pine	17	0	95
Ponderosa Pine	19	0	95

Volume by Grade	2S	3S & 4S 6"-11"	3S 12"+	6" - 11"	16"+	12"-15"	Total
Douglas - Fir	261	239	220	0	0	0	720
White Fir	23	450	0	0	0	0	473
Sugar Pine	0	0	0	24	49	0	73
Ponderosa Pine	0	0	0	158	260	68	486
Total	284	689	220	182	309	68	1,752

Comments: Pond Values Used: Local Pond Values, December 2019.

Log Markets: Klamath Falls and Medford.

Other Costs (no Profit & Risk): License Agreement with BLM: \$7,619.65.

Other Costs (with Profit & Risk to be added): None

TOTAL OTHER COSTS (with Profit & Risk to be added): None

ROAD MAINTENANCE

Move-in: \$400.00

General Road Maintenance: 2 miles x \$211 per mile x 1 bladings = \$822

Total Road Maintenance: \$822.00, \$0.47 per Mbf



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Ruffer
Sale KL-341-2019-W00501-01

District: Klamath/Lake

Date: January 10, 2020

Logging Costs

Operating Seasons: 1.00	Profit Risk: 10%
Project Costs: \$38,410.85	Other Costs (P/R): \$0.00
Slash Disposal: \$0.00	Other Costs: \$7,619.65

Miles of Road

Road Maintenance: \$0.47

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	4.5
White Fir	\$0.00	3.0	4.0
Sugar Pine	\$0.00	3.0	4.2
Ponderosa Pine	\$0.00	3.0	4.2



"STEWARDSHIP IN FORESTRY"

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Sale KL-341-2019-W00501-01

District: Klamath/Lake

Date: January 10, 2020

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$105.29	\$0.49	\$2.51	\$110.84	\$0.00	\$21.91	\$0.00	\$2.00	\$4.35	\$247.39
White Fir									
\$102.69	\$0.48	\$2.51	\$80.75	\$0.00	\$18.64	\$0.00	\$2.00	\$4.35	\$211.42
Sugar Pine									
\$105.21	\$0.49	\$2.51	\$79.17	\$0.00	\$18.74	\$0.00	\$2.00	\$4.35	\$212.47
Ponderosa Pine									
\$105.75	\$0.49	\$2.51	\$79.17	\$0.00	\$18.79	\$0.00	\$2.00	\$4.35	\$213.06

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$428.62	\$181.23	\$0.00
White Fir	\$0.00	\$399.42	\$188.00	\$0.00
Sugar Pine	\$0.00	\$317.12	\$104.65	\$0.00
Ponderosa Pine	\$0.00	\$310.49	\$97.43	\$0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Ruffer
Sale KL-341-2019-W00501-01

District: Klamath/Lake

Date: January 10, 2020

Summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
White Fir	0	\$0.00	\$0.00
Sugar Pine	0	\$0.00	\$0.00
Ponderosa Pine	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	720	\$181.23	\$130,485.60
White Fir	473	\$188.00	\$88,924.00
Sugar Pine	73	\$104.65	\$7,639.45
Ponderosa Pine	486	\$97.43	\$47,350.98

Gross Timber Sale Value

Recovery: \$274,400.03

Prepared By: James Monteil

Phone: 541-883-5681

Ruffer
KL-341-2019-W00501-01

Other Costs

Road Maintenance

Move-in cost (grader):	\$400.00
Number of Miles to be Bladed:	2
Number of Bladings:	1
Total Miles:	2
Miles/Hour for Equipment:	0.5
Cost/Hour (grader with operator):	\$105.50
Total Grading Hours:	4
Grading Cost:	<u>\$422.00</u>
Total Cost:	<u><u>\$822.00</u></u>
Cost/Mbf:	\$0.47

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KL-341-2019-W00501-01

Project Costs

Project #1 Dust Abatement (Profit & Risk to be added in Appraisal)

DF	719 Mbf	41%	Average Load	4.5 Mbf	No. of Loads	160
PP	486 Mbf	28%	Average Load	4.2 Mbf	No. of Loads	116
WF	473 Mbf	27%	Average Load	4 Mbf	No. of Loads	118
SP	73 Mbf	4%	Average Load	4.2 Mbf	No. of Loads	17
Total:	1752 Mbf				Total Loads	411

Assume:	4 Trucks/Day	20 Days of Dust Abatement
	3 Trips/Day	3 Hours/Day
	12 Loads per Day	\$88.00 Cost/Hour
	34 Hauling Days	60 Total Hours
		\$200.00 Move in for Water Truck
		\$150.00 Cost for Water Permit Keno Water
		\$10.00 Cost per 1000 gallons
		9,000.00 Gallons per day
		\$90.00 Daily water Cost
		\$1,950.00 Total Cost for water
		\$7,430.00 Total Cost
		\$4.24 Cost/Mbf

Project #1 Summary

<u>\$7,430</u> Total Cost for Dust Abatement	<u>\$4.24</u> per Mbf
\$7,430 Total Cost	\$4.24 per Mbf

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Project Costs

Project #2 Road Improvement and Construction

Move in Cost Dozer: \$400
Move in Cost Excavator: \$400

Improvement

	Points	Distance(ft)	Feet/Hour	Hours	Cost/Hour	Cost
Open/Clear/Shape	A to D	3693	1000	3.693	\$132.50	\$489.32
Open/Clear/Shape	B to C	1368	1000	1.368	\$132.50	\$181.26
Open/Clear/Shape	N to O	211	1000	0.211	\$132.50	\$27.96
Open/Clear/Shape	R to S	338	1000	0.338	\$132.50	\$44.79
Open/Clear/Shape	P to Q	462	1000	0.462	\$132.50	\$61.22
Open/Clear/Shape	L to M	432	1000	0.432	\$132.50	\$57.24
					Total	\$861.78

Construction

	Points	Distance(ft)	Feet/Hour	Hours	Cost/Hour	Cost
Construct Spur	J to K	1624	500	3.248	\$132.50	\$430.36
Construct Spur	G to H	697	500	1.394	\$132.50	\$184.71
Construct Spur	E		500	0.5	\$132.50	\$66.25
Construct Spur	F		500	0.5	\$132.50	\$66.25
					Total	\$747.57

Build Approach at Point J

	Hours	Cost/Hour	Cost
Excavator	8	\$125.00	\$1,000.00
Cat	4	\$132.50	\$530.00
Dump Truck	8	\$88.00	\$704.00
		Total	\$1,234.00

Project #2 Summary

Equipment Costs	\$800.00
Improvement Cost	\$861.78
Construction Cost	\$747.57
Approach Cost	\$1,234.00
Project # 2 Total	\$3,643.35
per Mbf	\$2.08

Ruffer
KL-341-2019-W00501-01
Project Costs

Project #3 Fell, Skid, and Pile Submerchantable Material

	Days	Cost per Day	Total
Feller Buncher	6 \$	1,500.00 \$	9,000.00
Skidder	3 \$	800.00 \$	2,400.00
Shovel	3 \$	1,000.00 \$	3,000.00
Total Cost		\$	14,400.00

Landing Slash Piling

Number of Landings: 22

Shovel Time:	1 Hour per Landing	Cost per Hour: \$125.00	Total Cost	\$2,750.00
Cat Time:	1 Hour per Landing	Cost per Hour: \$132.50	Total Cost	\$2,915.00
	Total	\$5,665.00		
	per MBF	\$3.23		

Project #3 Summary

Fell, Skid, Pile Submerchantable Material	\$ 14,400.00
Landing Slash Piling	\$5,665.00
Total Cost	\$ 20,065.00
per Mbf	\$11.45

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KL-341-2019-W00501-01
Project Costs

Project #4 Road Closures and Waterbarring

Road Closures

8 Number of Closure Points - Point E, F, G, J, L, N, R, P
\$132.50 Cost per Hour (Cat)
\$1,060.00 Total
\$0.26 per Mbf

Road Closure at Point I

1 Hour/Cat
2 Hour/Excavator
\$ 132.50 Cost per Hour/Cat
\$ 125.00 Cost per Hour/Excavator
\$382.50 Total
\$0.22 per Mbf

Skid Trail Waterbarring

22 Number of Landings
2 Hours per Landing
\$132.50 Cost per Hour (Cat)
\$5,830.00 Total
\$1.42 per Mbf

Project #4 Summary

Road Closure:	\$1,060.00
Road Closure I:	\$382.50
Waterbarring:	<u>\$5,830.00</u>
Total:	<u>\$7,272.50</u>
per Mbf:	\$1.78

Ruffer
KL-341-2019-W00501-01

Project Costs

Cost Summary All Projects

Project No.1 - Dust Abatement	\$7,430.00
Project No.2 - Road Improvement and Construction	\$3,643.35
Project No.3 - Fell, Skid, and Pile Submerchantable Material	\$20,065.00
Project No.4 - Road Closures and Waterbarring	\$7,272.50
Total Cost	\$38,410.85
per Mbf	\$21.92

Ruffer

KL-341-2019-W00501-01
Cruise Report



"STEWARDSHIP IN FORESTRY"

SALE NAME: Ruffer

LEGAL DESCRIPTION:

Township 40S, Range 7E, Portions of Sections 10, 11, 14, and 15, Willamette Meridian, Klamath County, OR.

BOUNDARY LINES:

Area 1 boundary is posted with "Timber Sale Boundary" signs, marked with fluorescent orange paint and fluorescent orange flagging.

Area 2 boundary is within the Area 1 boundary, but is separated by description.

FUND:

100% B.O.F.

ACREAGE:

Timber Sale is approximately 334 acres.

Areas 1 and 2 were combined for purposes of the cruise as the sale is unmarked and is prescription by description. Area 1 is 304 acres. Area 2 is 30 acres. Area 1 was cruised, while Area 2 was not due to its small acreage and it primarily being a light thinning of younger trees. Mapping was accomplished using a handheld Global Positioning System unit with the data run on the district Geographical Information System Program.

TREATMENT:

The Timber Sale is a purchaser select, partial-cut harvest down to a desired Basal Area of 60.

CRUISE METHOD:

Variable plot cruise with a ratio of a count plot for every measure plot. Fixed plot cruise for all sub-merchantable material (5.0" to 10.0") DBH for all Areas.

BASAL AREA FACTOR:

The sale was cruised using a 14 BAF.

PLOT DESIGNATION:

Plot centers were established at every plot with blue flag wire stakes with the corresponding plot number. Blue and white flagging was attached to the nearest available tree branch.

SAMPLE SIZE CALCULATIONS: Area 1 Only

CV%	DESIRED SE%	ACRES
70	12	304

$$\text{Number of Plots} = \frac{T^2 C^2}{A^2}$$

C = Coefficient of Variation in Percent (Taken from inventory data)

T = Number of Standard Errors

A = Desired Sampling Error for a sale of this size and value

Area $N = \frac{(1)^2(70)^2}{(12)^2} = 34 \text{ plots}$

Measurements and Grading:

- Ratio of a count plot for every measure plot.
- DBH and Height were measured on all "in" trees for measure plots.
- Pulp volume and sawlog volume cruised.
- See attached species and grade tables for minimum requirements.
- All trees were graded using the segment system.

TREE HEIGHT:

All trees were measured to a fixed diameter outside bark. This height is usually taken as high up the bole as possible, where the cruiser can clearly see the bole, and the taper remains constant (usually 6 or 8 inches). The log segments are broken out and graded accordingly.

MINIMUM D.B.H:

9.0" DBH for sawlog volume.

DIAMETER STANDARDS:

1" diameter class

BTR:

Standard ratios were used. See attached species tables.

FORM FACTOR:

Form factor was measured or estimated at 16' for each tree. Each tree was assigned its own Form Factor.

FORM POINT:

All trees were sighted at DBH.

VOLUME COMPUTATION:

All cruise data was input and run at the district on Atterbury's SuperAce program.

FINAL CRUISE RESULTS:

CV%	SE%	ACRES
50.1	8.6	304

TIMBER DESCRIPTION

SAWLOG VOLUME:

This volume was obtained from the variable plot cruise. All material graded camprun. See grade table for minimum standards.

SAWLOG VOLUME

Species	Average DBH	Gross Volume per acre (bf/acre)	Net Volume per acre (bf/acre)	Net Sale Volume MbF
White fir	11.9	1,573	1,556	473
Douglas-fir	18.6	2,409	2,367	719
Ponderosa pine	18.9	1,607	1,600	486
Sugar pine	17.0	240	240	73
Total	14.8	5,828	5,762	1,751

TOTAL NET SAWLOG VOLUME: 1,751 MBF

Stand Table Summary

TC TSTNDSUM
Project RUFER

T040 R007 S15 T040 R007 S15 TVARI

Page: 1							
TwP	Rge	Sec	Tract	Type	Acres	Plots	
Date: 01/24/2019							
040	007	15	634	VARI	304.00	34	
Av	Average Log	Net	Net				
S	Sample	FF	Ht	Trees/	BA/	Logs	
SpC	T	DBH	Trees	16'	Tot	Acre	
DF			11	1	81	38	1.297
DF			13	1	79	59	0.858
DF			14	3	84	62	2.371
DF			16	1	83	48	1.471
DF			18	1	87	71	0.492
							6.489
DF			20	1	79	80	0.401
DF			21	3	82	71	1.073
DF			22	1	80	57	0.316
DF			24	1	87	80	0.272
DF			25	1	81	73	0.255
DF			26	1	80	73	0.237
DF			27	1	85	82	0.218
DF			28	2	83	97	0.389
DF			31	1	80	78	0.156
DF			33	1	81	104	0.145
DF			48	1	87	138	0.067
DF	Totals		21	83	63	10.019	18.97
PP			10	1	77	56	1.753
PP			12	1	82	32	1.434
PP			18	1	83	66	0.585
							3.772
PP			21	2	82	55	0.889
PP			22	1	84	104	0.378
PP			23	1	81	49	0.362
PP			27	1	83	95	0.256
PP			28	1	85	105	0.235
PP			33	2	84	117	0.350
PP			38	1	86	111	0.131
PP	Totals		12	81	62	6.374	12.41
WF			9	2	84	45	3.628
WF			10	5	81	51	7.045
WF			11	7	83	52	8.265

WF		12	2	83	47	2.003
WF		13	2	81	47	1.717
WF		15	5	84	53	3.162
WF		16	3	81	64	1.696
WF		17	2	78	48	0.970
						28.487
WF		21	1	82	64	0.312
WF	Totals	29	82	51	28.799	22.42
SP		13	1	81	42	0.770
SP		17	1	84	46	0.413
SP		39	1	88	120	0.079
SP	Totals	3	82	48	1.263	2.00
Totals		65	82	55	46.455	55.80
						55.95

Sample Trees

65 Time: **12:35:53 PM**

Net	Net	Tons/	Cu.Ft.	Bd.Ft.	T o t a l s		
Acre	Acre	Cu.Ft.	Bd.Ft.	Acre	Acre	Acre	
0.84	1.30	7.0	30.0	0.29	9	39	
0.84	1.72	10.0	45.0	0.53	17	77	
2.52	3.17	16.7	67.2	1.62	53	213	
2.16	1.47	25.0	90.0	1.11	37	132	
0.84	0.98	23.0	115.0	0.68	23	113	
0.65							
0.84	0.80	32.0	135.0	0.76	26	108	
2.52	2.15	33.6	134.0	2.12	72	288	
0.84	0.32	34.0	140.0	0.31	11	44	
0.84	0.54	48.5	255.0	0.77	26	139	
0.84	0.51	47.0	190.0	0.69	24	97	
0.84	0.47	50.5	210.0	0.69	24	100	
0.84	0.44	61.0	310.0	0.76	27	135	
1.68	0.78	79.3	419.9	1.77	62	327	
0.84	0.31	83.0	395.0	0.74	26	123	
0.84	0.44	75.7	370.0	0.93	33	161	
0.84	0.20	202.3	1336.7	1.14	41	270	
15.59	32.7	151.8	14.91	509	2,367	4,534	
1.03	1.75	10.0	30.0	0.57	18	53	
1.03	1.43	9.0	30.0	0.41	13	43	
1.03	1.17	21.0	85.0	0.73	25	99	
0.59							
2.07	0.89	34.1	130.1	0.89	30	116	
1.03	1.13	31.7	170.0	1.05	36	193	
1.03	0.36	51.0	150.0	0.54	18	54	
1.03	0.51	63.5	350.0	0.93	33	179	
1.03	0.71	50.3	276.7	1.02	35	195	
2.07	1.05	74.4	422.8	2.22	78	444	
1.03	0.26	133.0	850.0	0.98	35	223	
9.27	34.6	172.5	9.33	321	1,600	2,836	
1.55	3.63	6.0	30.0	0.72	22	109	
3.86	7.04	8.8	34.0	2.02	62	240	
5.41	8.27	12.8	41.2	3.37	106	341	

1.55	2.00	15.0	44.8	0.95	30	90
1.55	1.72	17.5	50.0	0.94	30	86
3.86	3.16	27.5	105.1	2.65	87	332
2.32	2.25	23.0	87.5	1.57	52	197
1.55	0.97	30.0	80.2	0.87	29	78
0.99						
0.77	0.62	35.5	135.0	0.65	22	84
29.66	14.8	52.5	13.74	439	1,556	4,178
0.67	0.77	14.0	40.0	0.34	11	31
0.67	0.41	27.0	70.0	0.33	11	29
0.67	0.24	118.3	756.7	0.79	28	180
1.42	35.2	168.5	1.46	50	240	444
23.6	103.0	39.45	1320	5,762	11,992	4,012

Tons	Cunits	MBF	
88	28	12	
162	52	23	
494	160	65	
337	112	40	
206	69	34	
231	78	33	
645	220	87	
95	33	13	
233	80	42	
211	73	29	
210	73	30	
232	81	41	
537	187	99	
224	79	38	
284	100	49	
345	124	82	
1,548	719		
172	53	16	
124	39	13	
223	75	30	
271	92	35	
318	109	59	
163	56	16	
284	99	55	
309	108	59	
673	238	135	
298	106	68	
975	486		
220	66	33	
613	189	73	
1,026	321	104	

287	91	27
285	91	26
806	264	101
477	158	60
266	89	24
198	67	26
1,336	473	
103	33	9
102	34	9
240	85	55
152	73	
1,752		

Log Stock Table - MBF

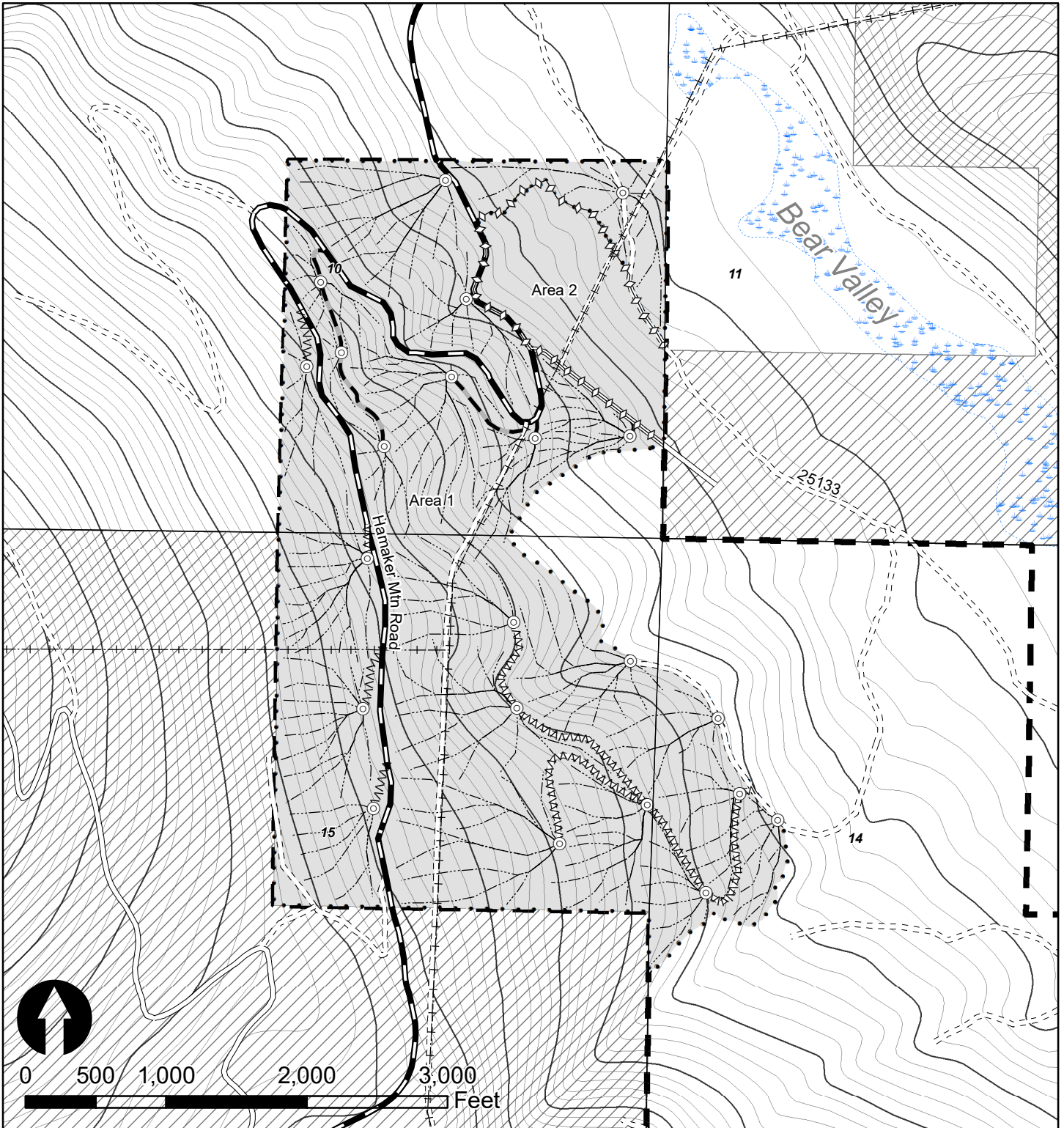
Project: RUFER

T040 R007 S15 TVARI

T040 R007 S15 TVARI

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	1
040	007	15	634	VARI	304.00	34	65	Date	1/24/2019
								Time	12:38:36PM

Spp	T	S	So	Gr	Log	Gross MBF	% Def	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
										2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
WF		CR	CR		17	79		79	16.8			64	15									
WF		CR	CR		26	138	2.2	135	28.4			97	23	14								
WF		CR	CR		34	261	.7	259	54.8			107	74	56	23							
WF		Totals				478	1.0	473	27.0			269	112	69	23							
DF		CR	CR		17	71		71	9.8			31	1	20		18						
DF		CR	CR		26	97		97	13.5			22	24	40				11				
DF		CR	CR		34	564	2.3	551	76.7			23	63	15	82	98	100	101	29		42	
DF		Totals				732	1.8	719	41.1			76	88	75	82	116	100	112	29		42	
PP		CR	CR		17	21		21	4.3			6	15									
PP		CR	CR		20	14		14	2.9							14						
PP		CR	CR		26	32		32	6.5			16	6		9							
PP		CR	CR		32	320	.7	318	65.4					36		37	125	78		43		
PP		CR	CR		34	101		101	20.7				16		63	22						
PP		Totals				488		486	27.8			22	38	98	9	59	139	78		43		
SP		CR	CR		26	9		9	12.9			9										
SP		CR	CR		32	49		49	67.1									19		30		
SP		CR	CR		34	15		15	20.0			9		6								
SP		Totals				73		73	4.2			18		6				19		30		
Total All Species						1,772	1.1	1,752	100.0			385	238	248	114	175	239	209	102		42	



LOGGING PLAN
 Of Timber Sale Contract
 KL-341-2019-W00501-01
 Ruffer
 Portions of Section 10, 14,
 and 15, T40S, R7E,
 Willamette Meridan,
 Klamath County, Oregon
 Approximately 334 acres

Created: January 23, 2019 KLD GIS

	Ruffer Timber Sale		Paved Road
	Board of Forestry		Surfaced Road
	US Bureau of Land Management		Unsurfaced Road
	Power Line		Blocked
	Road Improvement		Road Construction
	Landing		Skid Trails