



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
California Elk
Sale 341-10-08

District: Astoria

Date: January 15, 2010

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$936,730.68	\$189,684.31	\$1,126,414.99
		Project Work:	\$(164,578.00)
		Advertised Value:	\$961,836.99



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timber description

Location: Portions of Sections 25, 26, and 36, T7N, R8W, W.M., Clatsop County, Oregon.

Stand Stocking: 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	24	0	97
Western Hemlock / Fir	18	0	95
Sitka Spruce	20	0	92
Alder (Red)	16	0	96

Volume by Grade	2S	3S	4S	Camprur	Total
Douglas - Fir	963	203	18	0	1,184
Western Hemlock / Fir	2,739	1,402	186	0	4,327
Sitka Spruce	638	268	19	0	925
Alder (Red)	0	0	0	617	617
Total	4,340	1,873	223	617	7,053



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comments: Pond Values Used: 4th Quarter Calendar Year 2009.

Expected Log Markets: Tillamook, OR; Garibaldi, OR; Forest Grove, OR; Mist, OR; Aberdeen, WA.

Western redcedar Stumpage Price = Pond Value minus Logging Cost
 $\$618.48/\text{MBF} = \$790.00/\text{MBF} - \$171.52/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$700 daily truck cost.

Other Costs (with Profit & Risk to be added):

Additional Logging costs:

Branding and Painting: $\$1/\text{MBF} \times 7,053 = \$7,053.$

Close Roads in Areas 1 & 2: 8 hours \times \$110/hr. = \$880.

Slash Piling:

Slash Piling Estimates: 19 hours @ \$120/hr = \$2,280.00

Cover Material for Piles: 87 piles \times \$5/pile = \$435.

Move in cost for Excavator to pile slash post harvest: \$945.

TOTAL Other Costs (with Profit and Risk to be added) = \$11,593

Other Costs (No Profit & Risk added):

Road Use Fee (Simmons Field) = \$3,000

TOTAL Other Costs (No Profit & Risk added) = \$3,000



"STEWARDSHIP IN FORESTRY"

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logging conditions

combination#: 1 Douglas - Fir 30.97%
 Western Hemlock / Fir 29.60%
 Sitka Spruce 28.44%
 Alder (Red) 22.58%

yarding distance: Medium (800 ft) downhill yarding: No
 logging system: Shovel Process: Manual Delimiting

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
 loads / day: 10.0 bd. ft / load: 4,200
 cost / mbf: \$59.63

machines: Shovel Logger

combination#: 2 Douglas - Fir 68.36%
 Western Hemlock / Fir 63.58%
 Sitka Spruce 59.45%
 Alder (Red) 46.30%

yarding distance: Medium (800 ft) downhill yarding: No
 logging system: Cable: Medium Tower >40 - <70 Process: Stroke Delimber

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
 loads / day: 10.0 bd. ft / load: 3,900
 cost / mbf: \$85.75

machines: Log Loader (A)
 Stroke Delimber (A)
 Tower Yarder (Medium)

combination#: 3 Douglas - Fir 0.45%
 Western Hemlock / Fir 4.50%
 Sitka Spruce 7.99%
 Alder (Red) 20.54%

yarding distance: Short (400 ft) downhill yarding: No
 logging system: Shovel Process: Manual Delimiting

tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
 loads / day: 9.0 bd. ft / load: 4,000
 cost / mbf: \$69.57

machines: Shovel Logger

combination#: 4 Douglas - Fir 0.23%
 Western Hemlock / Fir 2.32%
 Sitka Spruce 4.12%
 Alder (Red) 10.58%



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yarding distance:	Short (400 ft)	downhill yarding:	No
logging system:	Cable: Small Tower <=40	Process:	Manual Delimiting
tree size:	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF		
loads / day:	7.0	bd. ft / load:	4,000
cost / mbf:	\$96.46		
machines:	Log Loader (A) Tower Yarder (Small)		



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logging costs

Operating Seasons:	3.00	Profit Risk:	15.00%
Project Costs:	\$164,578.00	Other Costs (P/R):	\$11,593.00
Slash Disposal:	\$0.00	Other Costs:	\$3,000.00

Miles of Road

Road Maintenance: \$4.00

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	3.0	4.0
Western Hemlock / Fir	\$0.00	3.0	3.6
Sitka Spruce	\$0.00	2.0	3.2
Alder (Red)	\$0.00	2.0	3.5



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logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$77.61	\$4.12	\$1.87	\$52.24	\$1.64	\$20.62	\$0.00	\$5.00	\$0.43	\$163.53
Western Hemlock / Fir									
\$77.54	\$4.20	\$1.87	\$59.18	\$1.64	\$21.66	\$0.00	\$5.00	\$0.43	\$171.52
Sitka Spruce									
\$77.47	\$4.32	\$1.87	\$102.72	\$1.64	\$28.20	\$0.00	\$5.00	\$0.43	\$221.65
Alder (Red)									
\$77.66	\$4.16	\$1.87	\$90.44	\$1.64	\$26.37	\$0.00	\$5.00	\$0.43	\$207.57

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$393.32	\$229.79	\$0.00
Western Hemlock / Fir	\$0.00	\$300.18	\$128.66	\$0.00
Sitka Spruce	\$0.00	\$338.35	\$116.70	\$0.00
Alder (Red)	\$0.00	\$515.00	\$307.43	\$0.00



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summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Sitka Spruce	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	1,184	\$229.79	\$272,071.36
Western Hemlock / Fir	4,327	\$128.66	\$556,711.82
Sitka Spruce	925	\$116.70	\$107,947.50
Alder (Red)	617	\$307.43	\$189,684.31

Gross Timber Sale Value

Recovery: \$1,126,414.99

Prepared by: Edward Holloran

Phone: 503-325-5451

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: California Elk
 Date: November 9, 2009
 By: Ed Holloran

MBF: 7,053
 \$\$/MBF: \$4.00

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations Entries (2)	Grader 14G	\$675	2	27	\$93	\$3,861
	Dump Truck 12CY	\$141	2	8	\$73	\$866
	FE Loader C966	\$675	1	16	\$77	\$1,907
Final Road Maintenance	Grader 14G	\$675	1	50	\$93	\$5,325
	Dump Truck 12CY	\$141	3	40	\$73	\$3,343
	FE Loader C966	\$675	1	40	\$77	\$3,755
	Vibratory Roller	\$675	2	45	\$72	\$4,590
	Water Truck 2,500 gallon	\$165	1	20	\$83	\$1,825
	Backhoe-small	\$279	2	20	\$72	\$1,998
	Labor			20	\$38	\$760
Total						\$28,230

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	2.5	6.8	2.7	27.2

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Process - Grader	1.5	6.8	4.5	45.3
Vibratory Roller	1.5	6.8	4.5	45.3

Process and Compact: California Barrel Road to Spur 30 (2.2 mi.), Spur 30 to Middle Fork Spur (1.3 mi.), Middle Fork Spur to Y (0.9 mi.), and then both side spurs (0.7mi.) and then Simmons Field (1.7 mi.).

Total Miles = 6.8 miles

Grader with 5 extra hours for moving between Simmons Field Road and California Barrel Road and misc.

SURFACING		Description	Stations/amount	x	Rate/sta/amt	Cost
Subgrade prep:						
1A-1B, 1C-1D, 1E-1F, 2A-2B	31.4 Sta.	Grade, Shape and outslope 14'	31.40	x	\$15.93	\$500.20
11 - 12, 13 - 14, 15 - 16	356.7 Sta.	Grade, Shape, and Ditch 16'	356.70	x	\$21.55	\$7,686.89
11 - 12, 13 - 14, 15 - 16	356.7 Sta.	Compact subgrade	356.70	x	\$17.52	\$6,249.38

ROAD SEGMENTS		1A to 1B		POINT-TO-POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Number of	of			
Road Approach	4'-0"	0+00 to 0+50	6	station	38	stations	0.5	19.0	\$4.87	\$93
Junctions	4'-0"	0+00	N/A	junction	11	junctions	1.0	11.0	\$4.87	\$54
Subgrade reinforcement	6"-0" pit run	As Needed	N/A	N/A		N/A		55.0	\$5.69	\$313
Total Rock for Road Segment:								85.0		\$459

ROAD SEGMENTS		1C to 1D		POINT-TO-POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Number of	of			
Subgrade reinforcement	6"-0" pit run	As Needed	N/A	N/A		N/A		11.0	\$5.69	\$63
Total Rock for Road Segment:								11.0		\$63

ROAD SEGMENTS		1E to 1F		POINT-TO-POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Number of	of			
Subgrade reinforcement	6"-0" pit run	As Needed	N/A	N/A		N/A		88.0	\$5.69	\$501
Total Rock for Road Segment:								88.0		\$501

ROAD SEGMENTS		2A to 2B		POINT-TO-POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Number of	of			
Subgrade reinforcement	6"-0" pit run	As Needed	N/A	N/A		N/A		11.0	\$5.69	\$63
Total Rock for Road Segment:								11.0		\$63

ROAD SEGMENT		11 to 12		POINT-TO-POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Number of	of			
Leveling Rock	4'-0"	0+00 to 87+60	N/A	patch	11	patches	34.0	374.0	\$4.87	\$1,821
Stream Crossings	1 1/2'-0"	6+50 to 8+50 25+30 to 27+30 41+20 to 44+20	3	station	19	stations	7.0	133.0	\$4.87	\$648
Culvert Bedding/Backfill	1 1/2'-0"	32+80, 83+75	N/A	culvert	22	culverts	2.0	44.0	\$4.87	\$214
Subgrade Reinforcement	6" 0'	66+00 to 87+00 78+50 to 77+50	N/A	N/A		N/A		86.0	\$5.69	
Total Rock for Road Segment:								617.0		\$2,683

ROAD SEGMENT		13 to 14		POINT-TO-POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Number of	of			
Base Rock	4'-0"	75+31 to 77+06	10	station	63	stations	1.75	110.0	\$4.57	\$503
Fill Widening	4'-0"	75+31 to 77+06	9	fill	43	fills	1	43.0	\$4.57	\$197
Curve Widening	4'-0"	75+31 to 77+06	9	curve	30	stations	1	30.0	\$4.57	\$137
Surface Rock	3/4'-0"	0+00 to 75+31, & 77+06 to 233+00	1	station	6	stations	231.25	1,388.0	\$4.57	\$6,343
Surface Rock	3/4'-0"	75+31 to 77+06	4	station	25	stations	1.75	44.0	\$4.57	\$201
Fill Widening	3/4'-0"	75+31 to 77+06	4	fill	14	fills	1.00	14.0	\$4.57	\$64
Curve Widening	3/4'-0"	75+31 to 77+06	4	curve	20	curves	1.00	20.0	\$4.57	\$91
Curve Widening	3/4'-0"	0+00 to 233+00	1	station	N/A	stations	N/A	160.0	\$4.57	\$695
Leveling rock	3/4'-0"	125+55	N/A	N/A	22	N/A	1.0	22.0	\$4.57	\$101
Turnouts	3/4'-0"		N/A	turnout	11	turnouts	32.0	352.0	\$4.57	\$1,609
Junctions	3/4'-0"		N/A	junction	11	junctions	10.0	110.0	\$4.57	\$503
Junctions	3/4'-0"	0+00, 117+80, 184+45	N/A	junction	22	junctions	3.0	86.0	\$4.57	\$302
Surface Rock	1 1/2'-0"	233+00 to 256+8	1	station	6	stations	23.8	143.0	\$4.57	\$654
Culvert Bedding/Backfill	1 1/2'-0"	86+70, 208+10	N/A	culvert	22	culverts	2.0	44.0	\$4.57	\$201
Turnouts	1 1/2'-0"	245+50, 251+50	N/A	turnout	11	turnouts	2.0	22.0	\$4.57	\$101
Turnaround	1 1/2'-0"		N/A	turnaround	11	turnarounds	2.0	22.0	\$4.57	\$101
Landing Approaches	4'-0"		N/A	landing	40	landings	2.0	80.0	\$4.57	\$366
Landings	6'-0"	242+50, 246+55, 250+76, 253+50, 82+35, 121+15, 177+86	N/A	landing	50	landings	4.0	320.0	\$5.70	\$1,824
Dissipator Rock	24'-6"		N/A	culvert	11	culverts	3.0	33.0	\$7.91	\$261
Total Rock for Road Segment:								3,013.0		\$14,241

ROAD SEGMENT		15 to 16		POINT-TO-POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Number of	of			
Surface Rock	1 1/2'-0"	0+00 to 12+30	1	station	6	stations	12.3	74.0	\$4.57	\$338
Landing Approaches	4'-0"		N/A	landing	40	landings	1.0	40.0	\$4.57	\$183
Landings	6'-0"	1+20, 7+00		landing	80	landings	2.0	160.0	\$5.70	\$912
Total Rock for Road Segment:								274.0		\$1,433

Processing:	Description	No. sta	Rate/sta	Cost			
	Crushed Rock process and compact +Water	356.70	\$49.02	\$17,485			
SUB TOTAL FOR SURFACING		33	711	707			
	36"-0" rr	24"-6" rr	6"-0" pr	4"-0"	1-1/2'-0"	3/4'-0"	Total
							4,099
							4,099
							\$51,364

SPECIAL PROJECTS		Description	Cost
	6'-0"	Develop pit run rock at Simmons C	711 \$2.30 /cy \$1,635.30
SUB TOTAL FOR SPECIAL PROJECTS			\$1,635
Subtotal of Surfacing & Spec. Proj.			\$53,000
Subtotal of Cleaning, Exc., Cuiv.			\$15,646
GRAND TOTAL			\$68,646

Sale Name: California Elk
 Project: No. 3 Double Culvert replacements
 Project Type: Type F Stream Crossings

Prepared by: d.mellison
 emh/jt
 Date: 12-2-09

Phase I: Fill, Culvert Removal and Culvert Disposal

Qty.	Equipment/Activity	Qty (Cy)	(\$/Cy)	Hours	(\$/Hr)	Cost (\$)
	Site preparation, pre digging			3	\$144.00	\$432.00
	Waste (load, haul, dump)	2,152	\$3.00			\$6,456.00
	Salvage existing surfacing/riprap	407		3	\$144.00	\$432.00
	Second Excavator digging and swinging material	1,000		12	\$144.00	\$1,728.00
	Dispose of existing culverts					
	C330 Excavator			1.5	\$144.00	\$216.00
	Dump Truck			3	\$73.00	\$219.00
						\$9,264.00

Phase II: Development of Foundation, Channel & De-watering

Qty.	Equipment/Activity	Qty (Cy)	(\$/Cy)	Hours	(\$/Hr)	Cost (\$)
	Level and grade bottom of bed			2	\$144.00	\$288.00
	Load, haul, dump bedding 1 1/2"-0" Cr. Rock	121	\$4.12			\$498.52
	Spread bedding material			2	\$144.00	\$288.00
2	Labor, raking, compacting bedding			2	\$38.00	\$152.00
	Hand held tamper			2	\$9.00	\$18.00
	Channel development, placing channel riprap			6	\$144.00	\$864.00
	Channel riprap (salvaged riprap)(retrival)	90		1	\$144.00	\$144.00
	Load, haul 36"-12" riprap (retention rock)	60	\$7.91			\$474.60
	Machine place retention riprap			2	\$144.00	\$288.00
2	Develop coffer dams			1.5	\$144.00	\$432.00
1	Water Pump			48	\$9.00	\$432.00
	Labor running/checking water pump			6	\$38.00	\$228.00
	Rock hammer			8	\$11.00	\$88.00
2	Laborer			8	\$38.00	\$608.00
						\$4,803.12

Phase III: Installation, Fill Reconstruction,

Qty.	Equipment/Activity	Unit	(\$/unit)	Hours	(\$/Hr)	Cost (\$)
2	Culvert Placement C330 Exc			4	\$144.00	\$1,152.00
2	Laborer			4	\$38.00	\$304.00
	Backfill Placement C330 Exc	2,950		30	\$144.00	\$4,320.00
	Load, haul, borrowed backfill material (pit run 6"-0")	2,050	\$3.91			\$8,015.50
	Skidder for Fill Compaction			20	\$85.00	\$1,700.00
	Load, haul Backfill 1 1/2"-0" Crushed Rock	493	\$4.12			\$2,031.16
	Hand Held Tamper, haunches compacted			6	\$9.00	\$54.00
2	Laborer			6	\$38.00	\$456.00
	Machine placed (HAULED) riprap (Fill Armor)	244		2	\$144.00	\$288.00
	Machine placed (Salvaged) riprap (Fill Armor)	216		3.5	\$144.00	\$504.00
	Additional 24"-6" Riprap Fill Armor Rock (\$/cy)	244	\$7.91			\$1,930.04
	96" Aluminized Steel Cul. (10 ga)(delivered) (3"x1" corrigation) (step bevel both ends) (75+89)	88				\$12,588.00
	96" Aluminized Steel Cul. (10 ga)(delivered) (3"x1" corrigation) (step bevel both ends) (76+36)	87				\$12,463.00
						\$45,805.70

Disposal Site Treatment

Qty.	Equipment/Activity	Qty (Cy)	(\$/Cy)	Unit	(\$/Unit)	Cost (\$)
	Shape Waste Area (Cat D-8)			6	\$147	\$882.00
	Compact Waste Area	2,152	\$0.30			\$645.60
	Seed and Mulch Waste Area			0.10	\$1,558	\$155.80
						\$1,683.40

Miscellaneous Costs

Qty.	Equipment/Activity	Qty	(\$/qty)	Ft.	(\$/Ft.)	Cost (\$)
1	Second Excavator Mobilization		\$1,220			\$1,220.00
	Seed and mulch work area			0.10	\$1,558	\$155.80
						\$0.00
						\$1,375.80

Total Project Cost = \$62,932.02

PIT RUN ROCK COST

SALE NAME: Cal Elk
 PROJECT: No.3-California Barrel Relocation
 QUARRY: to Waste Area 1

MATERIAL: Waste

DATE: 09/01/2009
 BY: d.mellison

		Cubic Yards								
Segment	Stations	Base	Landing	Turnout	Turnaround	Junction	Waste	Misc	Total	
I3 - I4							2,152		2,152	
Grand Total							2,152		2,152	

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
I3 - I4		2,152				0.40	0.15	0.80	0.15	1.50
TOTAL		2,152				0.40	0.15	0.80	0.15	AVERAGE HAUL 1.50
CUBIC YARD WEIGHTED HAUL						0.40	0.15	0.80	0.15	
Average Round Trip Distance (miles) 3.00										

ROCK HAUL:

Truck type: D20 No. trucks: 2
 Delay min.: 8 Efficiency: 85%

Truck type: D12 No. trucks:
 Delay min.: 6 Efficiency: 85%

Ave haul: 2.174902 /cy
 *Load: \$0.83 /cy
 Compaction: /cy

Production: cy/day = 691

PIT RUN ROCK HAUL COSTS 2,152 cy @ \$3.00 /cy

* C330 Exc (1/2 loading) \$72/hr * 8 hrs / 691 bcy = \$0.83

Project No. 4 California Elk Brushing

EMH 12/1/09

Segment	Name	Length (Miles)	Brush Type	Cost/Mile	Cost
I1-I2	Simmons Field	1.66	L to M	\$1,200.00	\$1,992.00
I3-I4	California Barrel(CB)	2.23	M	\$1,200.00	\$2,676.00
I3-I4	Spur 30 (CB60)	1.26	M	\$1,200.00	\$1,512.00
I3-I4	Middle Fork (CB6050)	1.37	M	\$1,200.00	\$1,644.00
I5-I6	Middle Fork (CB605070)	0.24	M	\$1,200.00	\$288.00
B1-B2	California Barrel(CB)	1.94	M to L	\$1,200.00	\$2,328.00
B1-B2	Elk Mtn. (CB160)	0.37	L	\$1,200.00	\$444.00
B3-B4	Leonard Basin (CB70)	1.20	M	\$1,200.00	\$1,440.00
B5-B6	Elk Mtn. (CB170)	0.31	L to M	\$1,200.00	\$372.00
B5-B6	Port Blakely Rd.(EM 178)	0.41	M to L	\$1,200.00	\$492.00
B7-B8	Spur to California Barrel Barrow site	0.29	M	\$1,200.00	\$348.00
B9-B10	Side Spur by Barrow site	0.20	M	\$1,200.00	\$240.00
	Move from I1-I2 to California Barrel				\$75.00

Total Miles	11.48	Total Project Cost	\$13,851
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Project Work Road Maintenance Cost Summary

Sale: California Elk
 Date: August 7, 2009
 By: Ed Hollaran

Type	Equipment/Rationale	Hours	Rate	Cost
Post-Projects Road	Grader 14G	25	\$93	\$2,325
	Vibratory Roller	19	\$72	\$1,368
	Water Truck	19	\$83	\$1,577
	Dump Truck	8	\$73	\$584
Total				\$5,854

Production Rates
 Grader - Processing
 Vibratory Roller

Miles/day	Distance(miles)	Days	Hours
1.6	3.8	2.4	19.0
1.6	3.8	2.4	19.0

Simmons Quarry to Highway 202 - 1.4 miles. Elk Mtn Quarry to Spur 30 Jct. - 2.1 miles Cal Barrel Quarry to California Barrel road - 0.3 miles TOTAL MILES for MAINTENANCE = 3.8 miles
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**CALIFORNIA ELK
FY 2009
TIMBER CRUISE REPORT**

1. **Sale Area Location:** Areas 1, 2, 3, and 4R/W are located in portions of Sections 25, 26, and 36, T7N, R8W; W.M., Clatsop County, Oregon.

All timber sale areas are posted with ODF "Timber Sale Boundary", "Area Boundary" signs and pink ribbon. Area 4 R/W is posted with ODF "Right-of-Way Boundary" signs.

2. **Fund Distribution:** **Fund:** BOF (100%)
 Tax Code: 1-02 (100%)

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acres	GTRA Acres	New R/W Acres	Stream Buffer Acres	Existing R/W Acres	Net Acreage
1	PC	33.1	n/a	-1.5	-4.3	0	27.3
2	MC	53.4	0	0.0*	-0.6	-1.5	51.3
3	MC	65.9	2	0.0	-1.2	-1.9	60.8
4	R/W	1.5	n/a	0.0	0.0	0.0	1.5
TOTALS		153.9	2	-1.5	-6.1	-3.4	140.9

* R/W included in net acres.

4. **Cruisers and Cruise Dates:** Area 1 was cruised by Bryce Rodgers (May 7, 2009), and Kraig Kirkpatrick (May 7 & 8, 2009). Area 2 was cruised by Kraig Kirkpatrick (May 8 & 21, 2009), and Area 3 was cruised by Derek Bangs (May 8, 2009), and Lanny Freeman (May 8 & 21, 2009).
5. **Cruise Method and Computation:** Cruises used Corvallis MicroTechnology (CMT) and Juniper Allegro data collectors, and were downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria District office.

Area 1 (Partial Cut), was variable plot cruised with a 33.61 BAF for conifers and hardwoods. 29 plots were sampled on a cruise grid of 5 chains by 2 chains, with a count/cruise ratio of 1:1.

Areas 2 and 3 (Modified Clear Cuts), were variable plot cruised with a 40 BAF for conifers and hardwoods. 45 plots were sampled on a cruise grid of 5 chains by 5 chains, with a count/cruise plot ratio of 2:1.

Area 4 R/W, was calculated using total cruise per acre volumes for partial harvest in Area 1, and applying road R/W acreage. Acreage for R/W in modified-clearcut Area 2 (1.39 acres) was included in the total net acreage for that sale area.

<u>AREAS</u>	<u>PROJECT</u>	<u>TRACT</u>	<u>CRUISE TYPE</u>
1	CALELK1	A1, A1TAKE, A1LEAVE	0PC1
2 & 3	CALELK1	A23, MCTAKE, MC LEAVE	0MC2
4 R/W	CALELK1	RW04	0PC1

6. **Timber Description:**

Area 1 (Partial Cut) – This stand is approximately 64 years old, consisting of conifer stands with patches of hardwoods. This stand averages 18.6 inches in DBH, with an average merchantable height of 77 feet to a merchantable top (6" d.i.b.). The take volume averages 15.8 inches in DBH with an average merchantable height of 68 feet. This stand will be harvested to an SDI of approximately 25, with a basal

Areas 2 and 3 (Modified Clearcut) – These stands are approximately 65 to 75 years old, consisting of mixed conifer stands with some patches of hardwoods along the draws and streams. The average “take” volume per acre is 58.8 MBF, tree size is 18.9” DBH and 73 feet to a merchantable top (6” D.I.B. or 40% of the diameter at 16 feet.).

7. **Statistical Analysis: (See also “Statistics Reports,” attached.)**

Area	Target CV	Target SE%	Actual CV	Actual SE%
1	50	10	35.4	5.3
2 & 3	50	10	42.9	8.1

The statistics for Areas 1, 2, and 3 are “Take” and “Leave” stands combined.

8. **Take Volumes by Species and Log Grades for All Sale Areas by MBF:** (See “Species, Sort Grade-Board Feet Volumes (Project)” and the “Stand Table Summary” attached, of the thinning and regeneration harvest areas combined.) Volumes do not include “ingrowth.” The majority of defect and breakage was culled out during the cruise.

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	Camp Run	% D & B	% Sale
Hemlock & Fir	18.0	4,327	2,739	1,402	186	-	4.7	61
Douglas-fir	24.2	1,184	963	203	18	-	0.5	17
Spruce	20.4	925	638	268	19	-	7.9	13
Hardwoods	16.2	617	-	-	-	617	3.6	9
TOTAL		7,053				617	4.4	100

9. Prepared by: Edward M. Holloran

Date: September 12, 2009

10. Approved by: *J. Tull*

Date: 11/20/09

11, Attachments: Species, Sort, Grade Reports (4 pages)
 Statistics Reports (4 pages)
 Stand Table Summary Reports (1 pages)
 Take - Log Stock Table Reports (4 pages)
 Cruise Plans & Maps (6 pages)

TC P5PCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T07N R07W S30 Ty0MC2 112.10
 T07N R08W S26 Ty0PC1 27.30
 T07N R08W S26 Ty0PC1 1.50

Project: CALELK1
 Acres 140.90

Page 1
 Date 9/12/2009
 Time 10:05:59AM

S Spp	So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre		
			Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf			
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
H	DOCU		100.0	1,264											13		0.00	15.7		
H	DO2S	63	.8	19,606	19,440	2,739		1	59	40		2	2	38	58	35	310	1.93	62.6	
H	DO3S	32	.8	10,033	9,952	1,402	0	90	10	0		1	5	29	65	36	101	0.77	98.6	
H	DO4S	5		1,327	1,327	187	2	98				52	48			20	28	0.45	47.5	
H Totals		61	4.7	32,229	30,719	4,327	0	34	41	25		4	5	33	58	31	137	1.08	224.5	
D	DO2S	81	.6	6,874	6,832	963		2	36	62				40	60	36	422	2.46	16.2	
D	DO3S	17		1,437	1,437	202		89	11				12	61	27	33	109	0.96	13.2	
D	DO4S	2		134	134	128		100					100			27	32	0.52	4.2	
D Totals		17	.5	8,444	8,402	1,184		18	31	50			4	43	53	34	250	1.69	33.6	
A	DOCU		100.0	99												3		0.00	3.4	
A	DOCR	100	1.4	4,437	4,374	617		63	29	8		7	12	39	42	29	89	0.94	48.9	
A Totals		9	3.6	4,536	4,374	617		63	29	8		7	12	39	42	27	84	0.93	52.3	
S	DOCU		100.0	507												9		0.00	6.4	
S	DO2S	68	.1	4,528	4,524	637		9	33	58		4	1	25	71	36	390	2.35	11.6	
S	DO3S	29	2.8	1,956	1,900	268		60	40	0		3	14	27	56	35	114	0.98	16.7	
S	DO4S	3		137	137	19		100				42	58			22	28	0.51	5.0	
S Totals		13	7.9	7,128	6,562	925		26	34	40		5	6	25	65	29	165	1.38	39.7	
Totals			4.4	52,339	50,056	7,053		0	33	37	30		3	5	34	57	30	143	1.16	350.0

T07N R07W S30 T0MC2 T07N R07W S30 T0MC2
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 07N 07W 30 MCTAKE 0MC2 112.10 45 135 1 W

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
H	DO	CU		100.0	1,500												13	0.00	18.7
H	DO	2S	65	.9	23,482	23,274	2,609	1	59	41	2	2	39	57	35	312	1.94	74.7	
H	DO	3S	30	.9	10,886	10,792	1,210	89	11		1	6	32	61	36	101	0.78	107.2	
H	DO	4S	5		1,504	1,504	169	2	98			56	44		20	28	0.46	54.0	
H	Totals		63	4.8	37,371	35,570	3,987	0	31	42	27	4	5	36	56	30	140	1.11	254.6
D	DO	2S	81	.6	8,626	8,573	961	2	36	62			40	60	36	422	2.46	20.3	
D	DO	3S	17		1,738	1,738	195	89	11			12	64	24	32	108	0.96	16.2	
D	DO	4S	2		154	154	17	100				100			26	32	0.52	4.8	
D	Totals		18	.5	10,518	10,465	1,173	18	31	51		4	43	53	33	253	1.71	41.3	
A	DO	CU		100.0	103										3		0.00	3.4	
A	DO	CR	100	2.0	3,769	3,694	414	63	27	10	8	13	50	30	28	86	0.95	43.2	
A	Totals		6	4.6	3,872	3,694	414	63	27	10	8	13	50	30	26	79	0.94	46.6	
S	DO	CU		100.0	536										5		0.00	5.4	
S	DO	2S	72		5,130	5,130	575	10	27	63	4		26	70	36	405	2.42	12.7	
S	DO	3S	26	3.6	1,937	1,867	209	57	43		2	18	30	49	34	113	1.02	16.6	
S	DO	4S	2		110	110	12	100				45	55		21	28	0.56	3.9	
S	Totals		13	7.8	7,713	7,108	797	24	31	46	5	6	27	63	29	184	1.53	38.5	
Type Totals				4.4	59,474	56,836	6,371	0	30	38	32	4	5	37	54	30	149	1.20	381.0

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)							Page 1										
		Project: CALELK1							Date 7/1/2009										
									Time 8:47:29AM										
T07N R08W S26 T0PC1										T07N R08W S26 T0PC1									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt										
07N	08W	26	AITAKE	0PC1	27.30	29	75	1	W										
S Spp	So T	Gr rt	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf	
A	DO	CU		00.0	84											4		0.00	3.2
A	DO	CR	100	.2	7,038	7,021	192		64	33	3	5	9	18	68	32	99	0.93	71.1
A Totals			32	1.4	7,122	7,021	192	64	33	3	5	9	18	68	30	95	0.92	74.3	
H	DO	CU		00.0	286											12		0.00	3.6
H	DO	2S	34		3,735	3,735	102		6	80	14		5	12	83	37	275	1.70	13.6
H	DO	3S	60	.5	6,498	6,465	176	1	96	4			2	8	90	39	102	0.70	63.1
H	DO	4S	6	.0	622	622	17	100				17	83			24	28	0.38	21.9
H Totals			49	2.9	11,142	10,822	295	0	65	30	5	1	8	9	82	34	106	0.79	102.1
S	DO	CU		00.0	369											18		0.00	10.1
S	DO	2S	45	1.1	1,871	1,850	51			100			8	16	76	36	268	1.76	6.9
S	DO	3S	49		1,986	1,986	54	73	27			6		13	81	36	117	0.83	16.9
S	DO	4S	6		238	238	7	100				36	64			23	26	0.43	9.0
S Totals			18	8.7	4,464	4,074	111	41	59			5	7	14	74	29	95	0.83	43.0
D	DO	3S	83		249	249	7	100							100	40	150	0.97	1.7
D	DO	4S	17		50	50	1	100					100			28	30	0.43	1.7
D Totals			1		299	299	8	100					17		83	34	90	0.75	3.3
Type Totals				3.5	23,027	22,216	607	0	61	36	3	3	8	12	76	32	100	0.84	222.7

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1											
		Project: CALELKI								Date 7/1/2009											
										Time 8:46:45AM											
T07N R08W S26 T0PC1										T07N R08W S26 T0PC1											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt	W											
07N	08W	26	RW04	0PC1	1.50	29	142	1													
S Spp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
H	DO	CU		00.0	1,400												11		0.00	10.1	
H	DO	2S	61	.3	18,777	18,717	28			3	55	42	2	6	10	83	37	341	2.08	54.9	
H	DO	3S	35	.3	10,623	10,587	16		0	91	7	2	0	5	11	83	37	106	0.75	99.9	
H	DO	4S	4		983	983	1			100			26	74			24	29	0.42	34.1	
H	Totals			60	4.7	31,784	30,286	45	0	37	36	27	2	8	10	80	34	152	1.10	199.0	
A	DO	CU		00.0	84												4		0.00	3.2	
A	DO	CR	100	.2	7,038	7,021	11			64	33	3	5	9	18	68	32	99	0.93	71.1	
A	Totals			14	1.4	7,122	7,021	11		64	33	3	5	9	18	68	30	95	0.92	74.3	
S	DO	CU		00.0	867												18		0.00	12.2	
S	DO	2S	71	.3	7,916	7,892	12				45	55			3	10	88	38	459	2.68	17.2
S	DO	3S	26		2,816	2,816	4		71	26	3		5	2	15	78	36	118	0.88	23.8	
S	DO	4S	3		312	312	0		100				43	57			22	27	0.44	11.8	
S	Totals			22	7.5	11,910	11,019	17		21	39	40	2	4	11	83	31	170	1.31	65.0	
D	DO	2S	59		1,047	1,047	2			66	34					100	40	314	1.86	3.3	
D	DO	3S	33		564	564	1		100					8		92	38	138	1.06	4.1	
D	DO	4S	8		140	140	0		100					100			28	35	0.49	4.0	
D	Totals			3		1,750	1,750	3		40	40	20		11		89	35	154	1.17	11.4	
Type Totals					4.7	52,567	50,077	75	0	37	37	26	2	7	11	79	32	143	1.11	349.6	

TC PSTATS		PROJECT STATISTICS							PAGE	1
		PROJECT CALELKI							DATE	7/1/2009
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	07	30	MCTAKE	0MC2	140.90	103	733	1	W	
07N	08W	26	AITAKE	0PCI						
07N	08W	26	RW04	0PCI						
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		103	733	7.1						
CRUISE		50	352	7.0	21,495		1.6			
DBH COUNT										
REFOREST										
COUNT		52	379	7.3						
BLANKS		1								
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	193	93.0	18.0	77		163.7	32,229	30,719	7,696	7,431
R ALDER	75	30.6	16.2	49		43.9	4,536	4,374	1,357	1,338
S SPRUCE	56	16.5	20.4	73		37.6	7,128	6,562	1,695	1,602
DOUG FIR	22	12.4	24.2	94		39.5	8,444	8,402	1,904	1,904
SNAG	6	.0	19.9	42		.1				
TOTAL	352	152.6	18.5	72		284.7	52,339	50,056	12,652	12,275
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL	68.1	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		150.9	14.9	79	93	107				
R ALDER		216.9	21.4	24	31	37				
S SPRUCE		184.1	18.1	14	17	20				
DOUG FIR		226.5	22.3	10	12	15				
SNAG		507.3	50.0	0	0	0				
TOTAL		108.8	10.7	136	153	169	473	118	53	
CL	68.1	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		140.4	13.8	141	164	186				
R ALDER		206.8	20.4	35	44	53				
S SPRUCE		203.9	20.1	30	38	45				
DOUG FIR		206.0	20.3	31	39	47				
SNAG		528.0	52.0	0	0	0				
TOTAL		102.8	10.1	256	285	314	423	106	47	
CL	68.1	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		142.4	14.0	26,410	30,719	35,028				
R ALDER		193.4	19.1	3,540	4,374	5,208				
S SPRUCE		211.2	20.8	5,196	6,562	7,927				
DOUG FIR		202.3	19.9	6,728	8,402	10,077				
SNAG										
TOTAL		107.6	10.6	44,747	50,056	55,366	463	116	51	

TC TSTATS				STATISTICS				PAGE	1				
PROJECT CALELK1								DATE	6/24/2009				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt				
07N	08W	26	A1	OPC1	28.80	29	246	1	W				
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES							
TOTAL		29	246	8.5									
CRUISE		17	142	8.4	4,337	3.3							
DBH COUNT													
REFOREST													
COUNT		12	102	8.5									
BLANKS													
100 %													
STAND SUMMARY													
SAMPLE TREES	TREES /ACRE	AVG DBH (in)	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC				
HEMLEAV	44	30.2	4.85	23.6	3.95	103	12.9	17.04	91.6	20,857	19,636	4,816	4,612
WHEMLOCK	33	45.2		15.5		80		59.1	11,142	10,822	2,826	2,764	
R ALDER	25	40.1		16.4		58		59.1	7,122	7,021	2,106	2,088	
SPRUCELV	14	5.7	5.63	31.7	6.33	111	5.6	5.15	31.3	7,793	7,285	1,721	1,612
S SPRUCE	16	21.4		15.1		60			26.7	4,464	4,074	1,160	1,047
DOUGLEAV	3	3.1	4.62	21.9	3.51	93	1.7	1.55	8.1	1,467	1,467	383	383
SNAG	6	3.2		19.9		42			7.0				
DOUG FIR	1	1.7		16.0		71			2.3	299	299	85	85
TOTAL	142	150.6	18.6	18.6	77	77			285.1	53,143	50,604	13,096	12,591
CONFIDENCE LIMITS OF THE SAMPLE													
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR													
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.					
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15					
HEMLEAV	65.1	12.3	27	30	34								
WHEMLOCK	123.3	23.3	35	45	56								
R ALDER	133.4	25.2	30	40	50								
SPRUCELV	132.2	25.0	4	6	7								
S SPRUCE	178.4	33.7	14	21	29								
DOUGLEAV	241.1	45.6	2	3	5								
SNAG	258.6	48.9	2	3	5								
DOUG FIR	373.9	70.7	0	2	3								
TOTAL	50.3	9.5	136	151	165	105	26	12					
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.					
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15					
HEMLEAV	58.0	11.0	82	92	102								
WHEMLOCK	116.4	22.0	46	59	72								
R ALDER	125.9	23.8	45	59	73								
SPRUCELV	121.6	23.0	24	31	38								
S SPRUCE	176.3	33.3	18	27	36								
DOUGLEAV	238.9	45.1	4	8	12								
SNAG	270.3	51.1	3	7	11								
DOUG FIR	373.9	70.7	1	2	4								
TOTAL	37.6	7.1	265	285	305	59	15	7					
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.					
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15					
HEMLEAV	58.1	11.0	17,480	19,636	21,792								
WHEMLOCK	125.0	23.6	8,266	10,822	13,378								
R ALDER	126.3	23.9	5,345	7,021	8,698								
SPRUCELV	135.7	25.7	5,416	7,285	9,153								
S SPRUCE	188.7	35.7	2,621	4,074	5,527								
DOUGLEAV	241.8	45.7	797	1,467	2,137								
SNAG													
DOUG FIR	373.9	70.7	88	299	510								

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	CALELK1			DATE	6/24/2009	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	26	A1	0PCI	28.80	29	246	1	W	
CL:	68.1%	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		42.9	8.1	46,505	50,604	54,702	76	19	8	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT CALELK1				DATE	7/8/2009	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	26	A1TAKE	0PC1	27.30	29	127	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		29	127	4.4						
CRUISE		16	75	4.7	2,958	2.5				
DBH COUNT										
REFOREST										
COUNT		12	52	4.3						
BLANKS		1								
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	33	45.2	15.5	80		59.1	11,142	10,822	2,826	2,764
R ALDER	25	40.1	16.4	58		59.1	7,122	7,021	2,106	2,088
S SPRUCE	16	21.4	15.1	60		26.7	4,464	4,074	1,160	1,047
DOUG FIR	1	1.7	16.0	71		2.3	299	299	85	85
TOTAL	75	108.4	15.8	68		147.2	23,027	22,216	6,177	5,984
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	123.3	23.3	35	45	56					
R ALDER	133.4	25.2	30	40	50					
S SPRUCE	178.4	33.7	14	21	29					
DOUG FIR	373.9	70.7	0	2	3					
TOTAL	63.2	11.9	95	108	121	165	41	18		
CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	116.4	22.0	46	59	72					
R ALDER	125.9	23.8	45	59	73					
S SPRUCE	176.3	33.3	18	27	36					
DOUG FIR	373.9	70.7	1	2	4					
TOTAL	58.0	11.0	131	147	163	140	35	16		
CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	125.0	23.6	8,266	10,822	13,378					
R ALDER	126.3	23.9	5,345	7,021	8,698					
S SPRUCE	188.7	35.7	2,621	4,074	5,527					
DOUG FIR	373.9	70.7	88	299	510					
TOTAL	63.5	12.0	19,552	22,216	24,881	167	42	19		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	CALELKI			DATE	7/8/2009	
TWP	RGÈ	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	26	AILEAVE	0PCI	27.30	29	119	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		29	119	4.1						
CRUISE		15	67	4.5	1,153	5.8				
DBH COUNT										
REFOREST										
COUNT		13	52	4.0						
BLANKS		1								
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
HEMLEAV	44	30.2	23.6	103		91.6	20,857	19,636	4,816	4,612
SPRUCELV	14	5.7	31.7	111		31.3	7,793	7,285	1,721	1,612
DOUGLEAV	3	3.1	21.9	93		8.1	1,467	1,467	383	383
SNAG	6	3.2	19.9	42		7.0				
TOTAL	67	42.2	24.5	99		137.9	30,116	28,387	6,920	6,607
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
HEMLEAV	65.1	12.3	27	30	34					
SPRUCELV	132.2	25.0	4	6	7					
DOUGLEAV	241.1	45.6	2	3	5					
SNAG	258.6	48.9	2	3	5					
TOTAL	53.7	10.1	38	42	47	119	30	13		
CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
HEMLEAV	58.0	11.0	82	92	102					
SPRUCELV	121.6	23.0	24	31	38					
DOUGLEAV	238.9	45.1	4	8	12					
SNAG	270.3	51.1	3	7	11					
TOTAL	40.3	7.6	127	138	148	67	17	7		
CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
HEMLEAV	58.1	11.0	17,480	19,636	21,792					
SPRUCELV	135.7	25.7	5,416	7,285	9,153					
DOUGLEAV	241.8	45.7	797	1,467	2,137					
SNAG										
TOTAL	42.2	8.0	26,121	28,387	30,653	74	18	8		

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	CALELKI		DATE	7/8/2009		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	07W	30	A23	0MC2	112.10	45	380	1	W	
CL:	68.1%	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
SPRUCELV		333.7	49.7	531	1,057	1,582				
HEMLEAV		361.6	53.9	357	775	1,192				
DOUGLEAV		468.9	69.9	119	395	671				
CEDLEAV		670.8	100.0	0	101	202				
TOTAL		35.4	5.3	56,043	59,163	62,283	50	13	6	

TC TSTATS				STATISTICS				PAGE 1		
PROJECT CALELKI				DATE 7/8/2009						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	07W	30	MCTAKE	OMC2	112.10	45	360	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		45	360	8.0						
CRUISE		17	135	7.9	18,303	.7				
DBH COUNT										
REFOREST										
COUNT		28	225	8.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	83	104.8	18.2	76		189.3	37,371	35,570	8,883	8,569
DOUG FIR	17	15.1	24.4	95		48.9	10,518	10,465	2,367	2,367
S SPRUCE	10	15.2	22.0	78		40.0	7,713	7,108	1,810	1,724
R ALDER	25	28.2	16.1	45		40.0	3,872	3,694	1,164	1,145
TOTAL	135	163.3	18.9	73		318.2	59,474	56,836	14,224	13,804
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	86.1	12.8	91	105	118					
DOUG FIR	136.0	20.3	12	15	18					
S SPRUCE	136.4	20.3	12	15	18					
R ALDER	178.1	26.6	21	28	36					
TOTAL	50.8	7.6	151	163	176	103	26	11		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	71.7	10.7	169	189	210					
DOUG FIR	116.9	17.4	40	49	57					
S SPRUCE	141.4	21.1	32	40	48					
R ALDER	170.6	25.4	30	40	50					
TOTAL	32.7	4.9	303	318	334	43	11	5		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	73.4	10.9	31,680	35,570	39,460					
DOUG FIR	112.9	16.8	8,703	10,465	12,226					
S SPRUCE	144.8	21.6	5,573	7,108	8,642					
R ALDER	166.4	24.8	2,778	3,694	4,610					
TOTAL	36.4	5.4	53,748	56,836	59,924	53	13	6		

TC TSTATS				STATISTICS				PAGE 1		
PROJECT CALELKI				DATE 7/8/2009						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	07W	30	MCLEAVE	OMC2	112.10	44	21	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		44	21	.5						
CRUISE		12	17	1.4	782	2.2				
DBH COUNT										
REFOREST										
COUNT		4	4	1.0						
BLANKS		28								
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
SNAG	7	4.6	15.9	41		6.4	25		47	
SPRUCELV	5	.8	35.2	98		5.5	1,094	1,081	266	266
HEMLEAV	3	1.1	27.1	85		4.5	891	792	204	189
DOUGLEAV	1	.4	30.0	102		1.8	411	404	89	89
CEDLEAV	1	.1	51.0	82		.9	103	103	34	34
TOTAL	17	7.0	22.4	59		19.1	2,524	2,380	641	578
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
SNAG		293.6	44.3	3	5	7				
SPRUCELV		331.8	50.0	0	1	1				
HEMLEAV		326.9	49.3	1	1	2				
DOUGLEAV		463.6	69.9	0	0	1				
CEDLEAV		663.3	100.0	0	0	0				
TOTAL		202.7	30.6	5	7	9	1,643	411	183	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
SNAG		269.2	40.6	4	6	9				
SPRUCELV		338.9	51.1	3	5	8				
HEMLEAV		340.3	51.3	2	5	7				
DOUGLEAV		463.6	69.9	1	2	3				
CEDLEAV		663.3	100.0	0	1	2				
TOTAL		146.3	22.1	15	19	23	857	214	95	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
SNAG										
SPRUCELV		329.7	49.7	543	1,081	1,618				
HEMLEAV		357.3	53.9	365	792	1,219				
DOUGLEAV		463.6	69.9	122	404	686				
CEDLEAV		663.3	100.0	0	103	206				
TOTAL		192.1	29.0	1,691	2,380	3,069	1,476	369	164	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT CALELKI		DATE 7/8/2009				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	26	RW04	OPC1	1.50	29	246	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		29	246	8.5						
CRUISE		17	142	8.4	234	60.8				
DBH COUNT REFOREST COUNT		12	102	8.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL. DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	77	77.8	18.8	88		150.7	31,784	30,286	7,616	7,356
R ALDER	25	40.1	16.4	58		59.1	7,122	7,021	2,106	2,088
S SPRUCE	30	29.7	18.9	68		57.9	11,910	11,019	2,832	2,608
DOUG FIR	4	4.9	19.8	84		10.4	1,750	1,750	464	464
SNAG	6	3.2	19.9	42		7.0				
TOTAL	142	155.7	18.3	76		285.1	52,567	50,077	13,018	12,516
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		86.4	16.3	65	78	91				
R ALDER		133.4	25.2	30	40	50				
S SPRUCE		140.4	26.5	22	30	38				
DOUG FIR		258.8	48.9	2	5	7				
SNAG		258.6	48.9	2	3	5				
TOTAL		46.7	8.8	142	156	169	90	23	10	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		69.9	13.2	131	151	171				
R ALDER		125.9	23.8	45	59	73				
S SPRUCE		125.8	23.8	44	58	72				
DOUG FIR		245.1	46.3	6	10	15				
SNAG		270.3	51.1	3	7	11				
TOTAL		37.6	7.1	265	285	305	59	15	7	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		70.5	13.3	26,252	30,286	34,321				
R ALDER		126.3	23.9	5,345	7,021	8,698				
S SPRUCE		136.9	25.9	8,168	11,019	13,870				
DOUG FIR		240.2	45.4	956	1,750	2,545				
SNAG										
TOTAL		44.0	8.3	45,915	50,077	54,240	80	20	9	

TC		TSTINDSUM		Stand Table Summary													
Project										CALELKI							
T07N R08W S26 T0PC1										T07N R08W S26 T0PC1							
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1								
07N	08W	26	A1LEAVE	OPC1	27.30	29	67	Date:	07/01/201								
								Time:	8:48:06AM								
S Spc	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	Totals				
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.		Net Bd.Ft.	Net Cu.Ft.	Net Bd.Ft.	Tons	Cunits	MBF	
HL		15	1	88	153	1.696	2.08	5.09	26.3	110.0							
HL		17	1	89	98	1.320	2.08	2.64	36.0	130.0		134	560			37	15
HL		19	4	86	113	4.227	8.32	11.63	34.5	130.0		95	343			26	9
HL		20	6	86	125	5.723	12.49	16.21	40.5	163.5		402	1,511			110	41
HL		21	3	85	134	2.595	6.24	7.79	44.6	185.6		656	2,652			179	72
HL		22	3	89	129	2.365	6.24	7.09	49.0	208.9		347	1,445			95	39
HL		23	2	85	141	1.442	4.16	4.33	54.8	226.7		348	1,482			95	40
HL		24	4	85	130	2.649	8.32	7.29	51.0	211.8		237	981			65	27
HL		25	3	82	139	1.831	6.24	5.49	62.8	253.3		372	1,543			101	42
HL		26	1	82	141	.564	2.08	1.69	70.0	296.7		345	1,392			94	38
HL		27	2	84	130	1.047	4.16	2.62	61.0	270.0		119	502			32	14
HL		28	2	82	113	.973	4.16	3.41	48.7	212.9		160	707			44	19
HL		29	2	84	135	.907	4.16	3.18	64.4	311.4		166	725			45	20
HL		33	1	85	117	.350	2.08	1.05	88.7	443.3		205	989			56	27
HL		34	3	79	132	.990	6.24	2.97	103.9	464.4		93	466			25	13
HL		35	1	80	121	.311	2.08	.93	109.0	490.0		309	1,380			84	38
HL		36	1	80	121	.294	2.08	.88	115.0	513.3		102	458			28	12
HL		37	1	81	135	.279	2.08	.84	132.7	626.7		102	453			28	12
HL		38	1	78	121	.264	2.08	.79	123.0	513.3		111	524			30	14
HL		43	1	86	154	.206	2.08	.62	209.3	1116.7		97	407			27	11
HL		45	1	89	115	.188	2.08	.38	226.0	1130.0		130	691			35	19
HL												85	426			23	12
HL		Totals	44	85	127	30.225	91.56	86.91	53.1	225.9		4,612	19,636			1,259	536
SL		21	2	83	131	1.859	4.47	5.58	43.3	168.3						66	26
SL		27	2	81	132	1.124	4.47	3.37	72.8	303.3		242	939			67	28
SL		28	1	86	146	.523	2.24	1.57	89.3	420.0		246	1,023			38	18
SL		29	1	80	135	.487	2.24	1.46	85.3	376.7		140	659			38	18
SL		31	1	80	141	.426	2.24	1.28	96.3	416.7		125	551			34	15
SL		35	1	83	141	.335	2.24	1.00	129.3	630.0		123	533			34	15
SL		42	2	83	151	.465	4.47	1.63	165.6	854.3		130	632			35	17
SL		50	1	61	121	.164	2.24	.49	201.7	616.7		269	1,389			74	38
SL		55	1	77	150	.135	2.24	.41	314.3	1513.3		99	303			27	8
SL		60	1	77	135	.114	2.24	.23	192.5	1005.0		128	615			35	17
SL		76	1	68	153	.071	2.24	.21	316.3	1936.7		44	229			12	6
SL												67	412			18	11
SL		Totals	14	81	136	5.703	31.29	17.23	93.6	422.9		1,612	7,285			440	199
DL		19	1	82	89	1.373	2.70	2.75	35.5	110.0						27	8
DL		23	1	85	142	.937	2.70	2.81	52.7	216.7		98	302			40	17
DL		25	1	85	133	.793	2.70	2.38	57.7	233.3		148	609			37	15
DL		Totals	3	84	116	3.104	8.11	7.94	48.2	184.8		137	555			105	40
SN		16	1	88	80	.830	1.16										
SN		18	1	88	33	.656	1.16										
SN		20	1	89	17	.531	1.16										
SN		21	2	88	34	.964	2.32										
SN		30	1	89	30	.236	1.16										
SN		Totals	6	88	43	3.217	6.95										
Totals			67	85	121	42.248	137.92	112.07	59.0	253.3		6607	28,387			1,804	775

Log Stock Table - MBF

T07N R07W S30 Ty0MC2	112.10
T07N R08W S26 Ty0PC1	27.30
T07N R08W S26 Ty0PC1	1.50

Project: CALELK1
Acres 140.90

Page 1
Date 7/1/2009
Time 8:50:15AM

Spp	T	So Gr	Log	Len	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+
H		DO	CU	2	0	100.0														
H		DO	CU	4	0	100.0														
H		DO	CU	6	55	100.0														
H		DO	CU	8	18	100.0														
H		DO	CU	10	22	100.0														
H		DO	CU	12	56	100.0														
H		DO	CU	14	7	100.0														
H		DO	CU	18	0	100.0														
H		DO	CU	24	4	100.0														
H		DO	CU	32	0	100.0														
H		DO	CU	52	17	100.0														
H		DO	2S	12	0		0	.0							0					
H		DO	2S	16	23		23	.5							0	23				
H		DO	2S	18	26		26	.6					12	14						
H		DO	2S	24	54		54	1.2						23	30	0	0			
H		DO	2S	32	1,053		1,043	24.1					4	188	427	348	76			
H		DO	2S	34	0		0	.0						0						
H		DO	2S	40	1,606		1,593	36.8					19	350	340	615	267	2	1	
H		DO	3S	14	2		2	.0					2							
H		DO	3S	16	14		14	.3					0	14						
H		DO	3S	22	0		0	.0					0							
H		DO	3S	24	18	5.3	17	.4				4	14							
H		DO	3S	26	16		16	.4					11	5	0					
H		DO	3S	27	0		0	.0				0	0							
H		DO	3S	28	22		22	.5				14	8							
H		DO	3S	29	4		4	.1					4							
H		DO	3S	30	15		15	.3				9	5							
H		DO	3S	31	0		0	.0				0								
H		DO	3S	32	387	1.5	381	8.8				56	82	200	32		10			
H		DO	3S	34	15		15	.3				2	12							
H		DO	3S	35	8		8	.2				2	6							
H		DO	3S	36	20	16.6	16	.4				16	0							
H		DO	3S	37	9		9	.2				9								
H		DO	3S	38	19		19	.4				19								
H		DO	3S	40	864		863	19.9				1	144	242	387	88	1	0		
H		DO	4S	12	0		0	.0					0							

Log Stock Table - MBF

T07N R07W S30 Ty0MC2 112.10
 T07N R08W S26 Ty0PC1 27.30
 T07N R08W S26 Ty0PC1 1.50

Project: CALELK1
 Acres 140.90

Page 2
 Date 7/1/2009
 Time 8:50:15AM

Spp	S T	So Gr rt de	Log Len	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+
H		DO 4S	13	3		3	.1			3									
H		DO 4S	14	13		13	.3			13	0								
H		DO 4S	16	37		37	.8			21	16								
H		DO 4S	17	0		0	.0			0									
H		DO 4S	18	19		19	.4		3	11	5								
H		DO 4S	20	26		26	.6			20	6								
H		DO 4S	21	1		1	.0			1									
H		DO 4S	22	20		20	.5			14	6								
H		DO 4S	24	38		38	.9			38	1								
H		DO 4S	25	5		5	.1			5									
H		DO 4S	26	11		11	.3			11									
H		DO 4S	27	0		0	.0			0									
H		DO 4S	28	13		13	.3			13									
H		DO 4S	30	2		2	.0			2									
H		Totals		4,541	4.7	4,328	61.4		4	424	408	630	670	819	1005	365	2	1	
D		DO 2S	32	389	1.0	385	32.5						37	60	192	95			
D		DO 2S	40	580		578	48.8					18	46	22	249	187	55		
D		DO 3S	22	5		5	.4					5							
D		DO 3S	26	5		5	.4				5								
D		DO 3S	28	4		4	.4				4								
D		DO 3S	29	10		10	.9			0	10								
D		DO 3S	32	110		110	9.3			18	5	64		22					
D		DO 3S	34	14		14	1.2				14								
D		DO 3S	40	54		54	4.6					54							
D		DO 4S	22	4		4	.4			4	0								
D		DO 4S	26	3		3	.3			3									
D		DO 4S	28	11		11	.9			11									
D		DO 4S	30	0		0	.0			0									
D		Totals		1,190		1,184	16.8			37	39	142	83	104	441	282	55		
A		DO CU	3	1	100.0														
A		DO CU	4	2	100.0														
A		DO CU	6	1	100.0														
A		DO CU	9	10	100.0														
A		DO CR	16	20		20	3.2			8		12							
A		DO CR	18	3		3	.4			3									
A		DO CR	20	20	4.5	19	3.2			17	3								

Log Stock Table - MBF

T07N R07W S30 Ty0MC2 112.10
 T07N R08W S26 Ty0PC1 27.30
 T07N R08W S26 Ty0PC1 1.50

Project: CALELKI
 Acres 140.90

Page 3
 Date 7/1/2009
 Time 8:50:15AM

Spp	S T	So Gr rt de	Log Len	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+		
A		DO CR	21	13		13	2.1			13											
A		DO CR	24	32		32	5.2			25					7						
A		DO CR	26	3		3	.5			3											
A		DO CR	28	25	9.1	23	3.7			17		6									
A		DO CR	30	1		1	.2			1											
A		DO CR	31	8		8	1.3			8											
A		DO CR	32	234	1.8	229	37.2			7	7	128	35	38	16						
A		DO CR	33	4		4	.7			4											
A		DO CR	36	13		13	2.1			13											
A		DO CR	37	18	5.6	17	2.8					17									
A		DO CR	40	231		231	37.4			20	42	58	43	36	26	6					
A		Totals		639	3.6	616	8.7			139	51	198	100	73	48	6					
S		DO CU	6	19	100.0																
S		DO CU	8	15	100.0																
S		DO CU	12	0	100.0																
S		DO CU	15	31	100.0																
S		DO CU	24	3	100.0																
S		DO CU	28	3	100.0																
S		DO CU	40	0	100.0																
S		DO 2S	12	26		26	2.8									26					
S		DO 2S	24	4		4	.5					0		4							
S		DO 2S	28	0		0	.0								0						
S		DO 2S	32	158		157	17.0					3		24	54	76				0	
S		DO 2S	34	0		0	.0					0									
S		DO 2S	40	450		450	48.7					58	12	153	10	215	1			2	0
S		DO 3S	16	9		9	.9					5	3								
S		DO 3S	24	32		32	3.5					9			23						
S		DO 3S	25	6		6	.7				6										
S		DO 3S	27	0		0	.0				0										
S		DO 3S	30	0		0	.0									0					
S		DO 3S	32	60	7.6	55	6.0				3	20	32	0							
S		DO 3S	34	15		15	1.6					15									
S		DO 3S	35	1		1	.1				1										
S		DO 3S	36	3		3	.4				3	0									
S		DO 3S	38	0		0	.0					0									
S		DO 3S	39	0		0	.0									0					
S		DO 3S	40	149	2.2	146	15.8				34	46	18	12	35						

Log Stock Table - MBF

T07N R07W S30 Ty0MC2	112.10
T07N R08W S26 Ty0PC1	27.30
T07N R08W S26 Ty0PC1	1.50

Project: CALELK1
 Acres 140.90

Page 4
 Date 7/1/2009
 Time 8:50:15AM

Spp	S T	So Gr rt de	Log Len	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+	
S		DO 4S	12	3		3	.3					3								
S		DO 4S	14	3		3	.3			3										
S		DO 4S	16	1		1	.1			0	0									
S		DO 4S	18	1		1	.1			1										
S		DO 4S	20	1		1	.2			1										
S		DO 4S	24	1		1	.1			1										
S		DO 4S	25	1		1	.1			1										
S		DO 4S	28	9		9	1.0			9										
S		Totals		1,004	7.9	925	13.1			56	55	127	63	216	88	316	1	2	0	
Total		All Species		7,375	4.4	7,053	100.0		4	656	553	1098	917	1212	1582	970	58	3	0	

Revised August, 2002

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: CALIFORNIA ELK Area(s) MC - 2, 4, 5, 6, & 7
CALELK T07N R07W SEC 30 Type: MC 2 Tract: A24567 Age 60
Harvest Type: (CC) PC CT: "Automark Thinning" (circle one)

Approx. Cruise Acres: 292 Estimated CV% 50 ^{Net BF or} BA/Acre SE% Objective 10 ^{Net BF or} BA/Acre

Planned Sale Volume: 14.8 MMBF Estimated Sale Area Value/Acre: \$2,400,000

- A. **Cruise Goals:** (a) Grade minimum 100 conifer and 50 hardwood trees:
(b) Sample 124 cruise plots; (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; Determine LWD (down wood) cubic feet and decay classes; Determine "diameter limit" harvest parameters;)
Basal Area leave target sq. ft. Cruiser needs to select or leave trees per plot.

B. Cruise Design:

1. **Plot Cruises:** BAF 40.0 (Full point) Half point) (circle one)
Fixed Plot Size Plot Radius feet
Cruise Line Directions A4 & 6-NORTH/SOUTH A2, 5 & 7-EAST/WEST
Cruise Line Spacing 5 chains 330 feet.
Cruise Plot Spacing 5 chains 330 feet.
Grade/Count Ratio 1 CRUISE/ 2COUNT
2. **ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir Hemlock
Spruce True Fir Cedar Hardwood

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods.
Record dbh to nearest $\frac{1}{2}$ " for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
3. **Top Cruise Diameter (TCD):** Minimum top outside bark for conifer is 7", 7" for hardwoods, or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Use 8' and 10' multiples for hardwoods. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: Use R = Camp Run

7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.

8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.

ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.

9. **Cruising Equipment:** Relaskop Rangefinder Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: ED HOLLORAN

Approved by: [Signature]

Date: Submitted: 5-4-09 Approved: 5/5/09

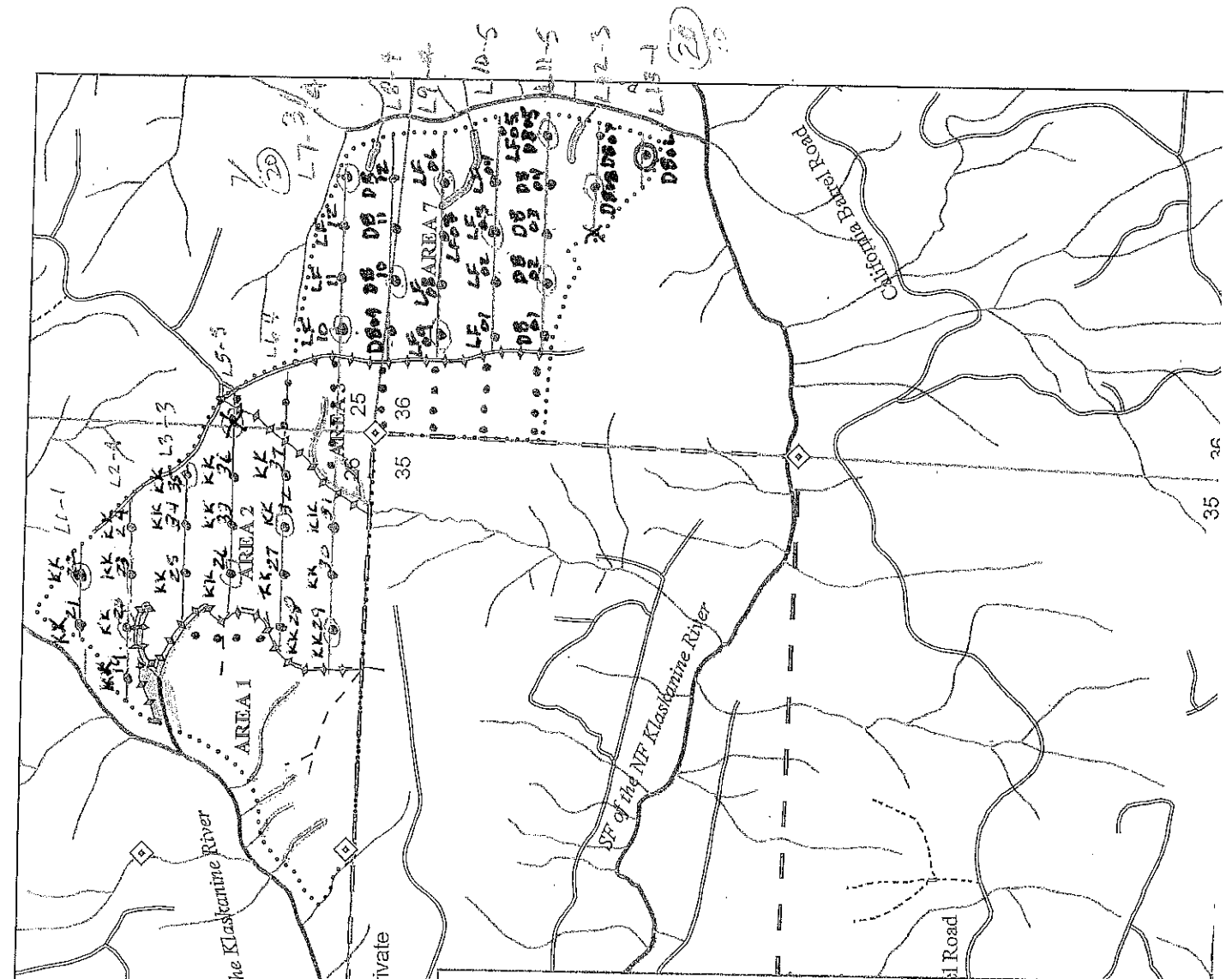


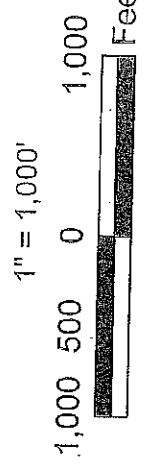
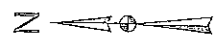
Exhibit A

California Elk

T7N, R7W, Sections 31, 32, & 33 & T7N, R8W
 Sections 25, 26, & 36 WM, Clatsop County, Oregon

Legend

- ◆ Section Corners
- ◊ Area Boundary
- Timber Sale Boundary
- - - 5A-5D
- pls Cal Elk
- ▣ Non-merch
- ownership
- Dirt Roads
- == Paved Roads
- == Rocked
- vacated
- Fish
- Nonfish
- Unknown
- ▨ Posted Stream Buffer
- ▨ Innotated Buffer



Revised August, 2002

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: CALIFORNIA ELK Area(s) PC - 1 & 3
CALELK T07N R08W SEC: 26 for Area 1 TYPE: PC01 TRACT: A1 Age 60
For Area 3 use TYPE: PC03 TRACT A3 Age 60

Harvest Type: CC (PC) CT "Automark Thinning" (circle one)

Approx. Cruise Acres: 54 Estimated CV% 50 ^{Net BF/acre} SE% Objective 10 ^{Net BF/acre}
A1=29 A3=25

Planned Sale Volume: 14.8 MMBF Estimated Sale Area Value/Acre: \$2,400,000

- A. **Cruise Goals:** (a) Grade minimum 100 conifer and 50 hardwood trees:
(b) Sample 56 cruise plots; (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; Determine snag and leave tree species and sizes; Determine LWD (down wood) cubic feet and decay classes; Determine "diameter limit" harvest parameters;)
Basal Area leave target A1-110sq. ft. Cruiser needs to select 3 or 4 leave trees per plot.
Basal Area leave target A3-140sq. ft. Cruiser needs to select 4 or 5 leave trees per plot.
In Area 1: Cut all Alder 12 inches DBH and over.

B. Cruise Design:

1. **Plot Cruises:** BAF 33.61 (Full point) ~~Half point~~ (circle one)
Fixed Plot Size Plot Radius feet
Cruise Line Direction(s) A1-NORTH/SOUTH A3-EAST/WEST
Cruise Line Spacing 5 chains 330 feet.
Cruise Plot Spacing 2 chains 132 feet.
Grade/Count Ratio 1 Cruise Plot / 1 Count Plot
2. **ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir Hemlock
Spruce True Fir Cedar Hardwood

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods.
Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
3. **Top Cruise Diameter (TCD):** Minimum top outside bark for conifer is 7", 7" for hardwoods, or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major

conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Use 8' and 10' multiples for Hardwoods. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.
6. **Species, Sort, and Grade Codes:**
 - A. **Species:** Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
 - B. **Sort:** Use code "1" (Domestic).
 - C. **Grade:** A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: use R = Camp Run
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures:**
 - Plot Type Cruises:** Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
 - ITS and 100% Cruises:** Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.
9. **Cruising Equipment:** Relaskop Rangefinder Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
10. **Attachments:**
 - A. **Cruise Map** (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: ED HOLLORAN

Approved by: [Signature]

Date: Submitted: 5-4-09 Approved: 5/5/09

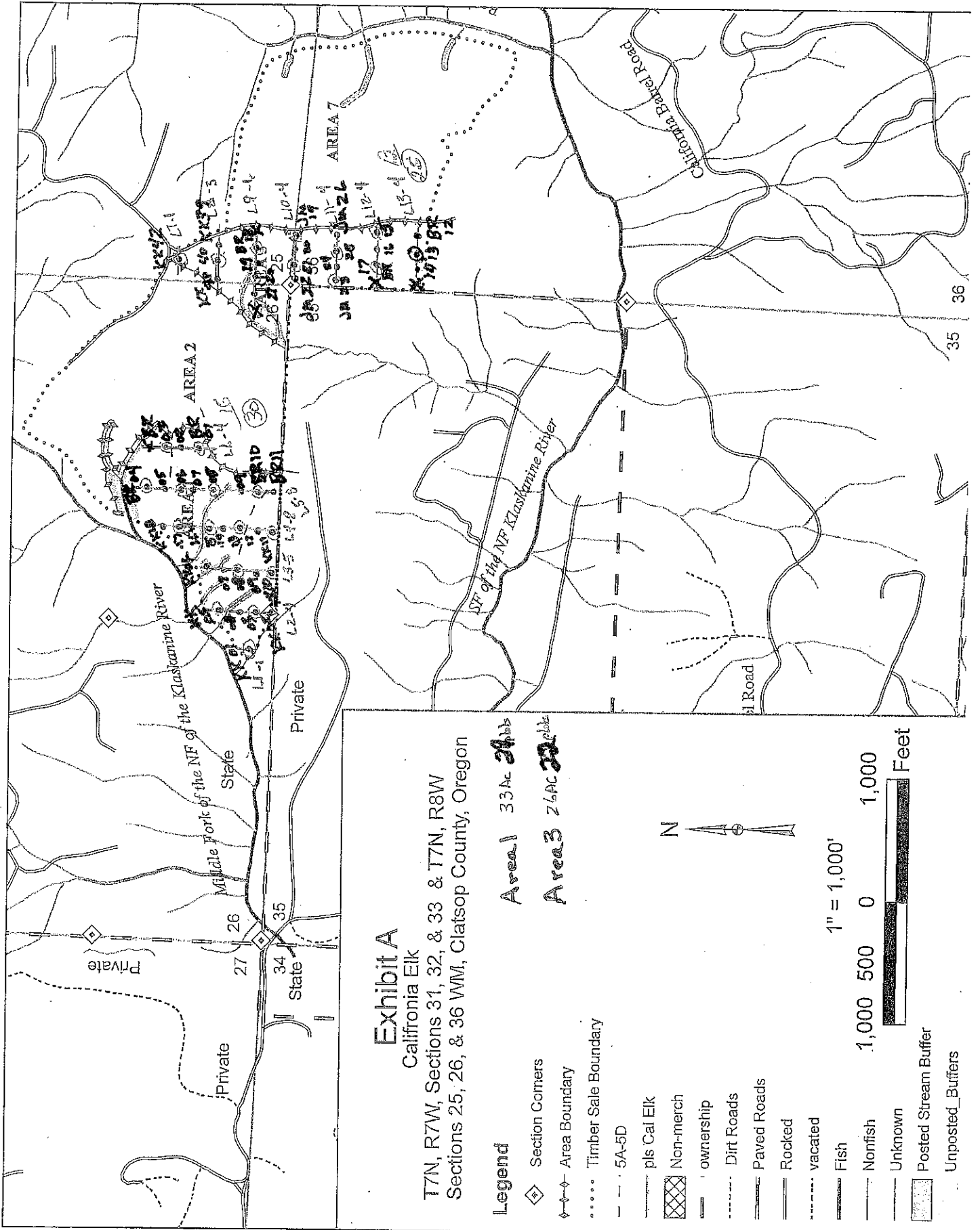
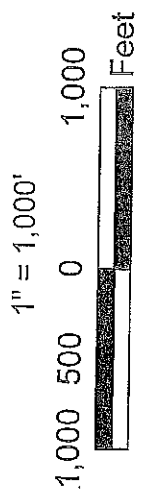
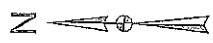


Exhibit A

California Elk
 T7N, R7W, Sections 31, 32, & 33 & T7N, R8W
 Sections 25, 26, & 36 WM, Clatsop County, Oregon

Area 1 33 Ac **24** lbs
 Area 2 2 1/2 Ac **22** lbs

- Legend**
- ◆ Section Corners
 - ◊-◊-◊ Area Boundary
 - Timber Sale Boundary
 - - - 5A-5D
 - pls Cal Elk
 - ▣ Non-merch
 - ownership
 - - - Dirt Roads
 - Paved Roads
 - Rocked
 - vacated
 - Fish
 - Nonfish
 - Unknown
 - ▣ Posted Stream Buffer
 - Unposted_Buffers

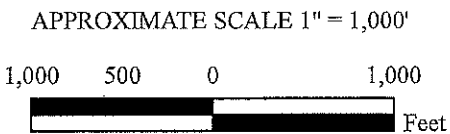
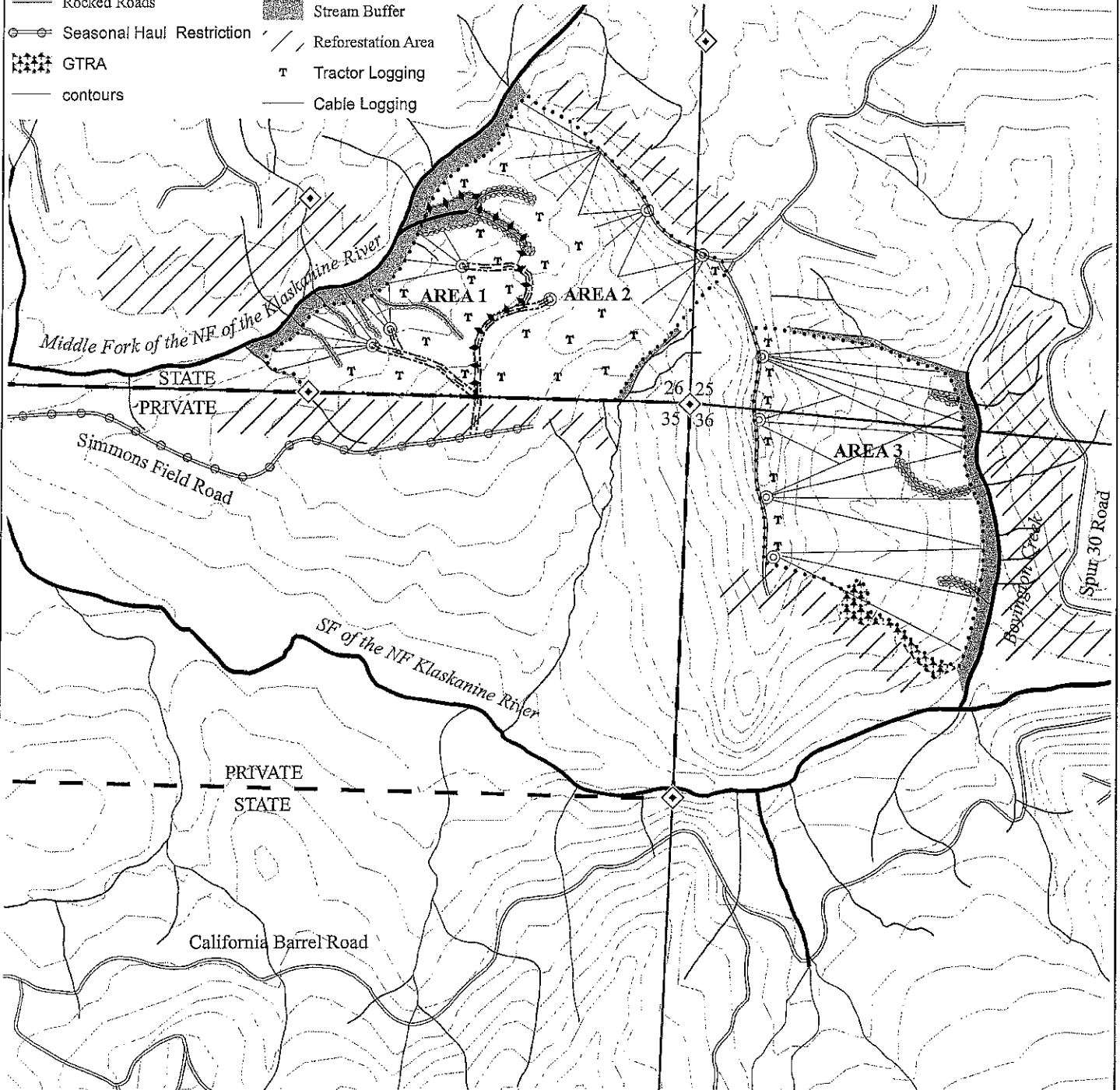


LEGEND

LOGGING PLAN MAP

- Timber Sale Boundary
- ◆◆◆ Area Boundary
- Right of Way Boundary
- Ownership Boundary
- == Paved Roads
- Rocked Roads
- Seasonal Haul Restriction
- GTRA
- contours
- Fish Streams
- Nonfish Streams
- ◆ Survey Monuments
- ⌵ Quarry Site
- ▨ Posted Stream Buffer
- ▨ Stream Buffer
- ▨ Reforestation Area
- ⊥ Tractor Logging
- Cable Logging

OF TIMBER SALE CONTRACT NO. 341-10-08
 CALIFORNIA BLK
 PORTIONS OF SECTIONS 25, 26, & 36, T7N, R8W, W.M.,
 CLATSOP COUNTY, OREGON



APPROXIMATE NET ACREAGE		
AREA	MC ACRES	PC ACRES
AREA 1		27.3
AREA 2	51.3	
AREA 3	60.8	
AREA 4 R/W	1.5	
TOTAL	113.6	27.3
TOTAL ALL AREAS		140.9

LOGGING BREAKDOWN		
AREA	TRACTOR	CABLE
AREA 1	66%	34%
AREA 2	63%	37%
AREA 3	4%	96%
TOTAL	39%	61%