



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Cool Hand Lucas  
Sale wo-341-2022-w00899-01

District: West Oregon

Date: October 27, 2021

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**Cost Summary**

	<b>Conifer</b>	<b>Hardwood</b>	<b>Total</b>
<b>Gross Timber Sale Value</b>	\$664,171.88	\$81,474.68	\$745,646.56
		<b>Project Work:</b>	(\$92,336.00)
		<b>Advertised Value:</b>	\$653,310.56



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### Timber Description

**Location:** Portions of Sections 28 & 29, T9S, R8W, Polk County, Oregon.

**Stand Stocking:** 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	25	0	97
Western Hemlock / Fir	18	0	97
Alder (Red)	14	0	96

Volume by Grade	2S	3S & 4S 6"-11"	Camprun	Total
Douglas - Fir	399	49	0	448
Western Hemlock / Fir	1,342	497	0	1,839
Alder (Red)	0	0	268	268
<b>Total</b>	1,741	546	268	2,555

**Comments:** Pond Values Used: Local Pond Values, September, 2021

Other Conifers Stumpage Price = Pond Value minus Logging Cost:  
\$233.64/MBF = \$530.00/MBF - \$296.36/MBF

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:  
\$953.64/MBF = \$1,400.00/MBF - (\$296.36/MBF + \$150/MBF(Extra Haul Cost))

Bigleaf maple and Other Hardwoods Stumpage Price = Hardwood Pulp price using a conversion factor of 10ton/MBF = \$25.00/MBF

PULP (Conifer and Hardwood Price) = \$2.50/TON

Other Costs (with Profit & Risk to be added):  
Intermediate Support/Tail Trees: 6 supports @ \$100/support = \$600  
TOTAL Other Costs (with Profit & Risk to be added) = \$600

Other Costs (No Profit & Risk added):  
Equipment Cleaning (Invasive Species): \$2,000  
Landing Slash Piling and sorting out firewood: 8 Landings @ \$180/Landing = \$1,440  
Landing Slash Piling: 3 Landings @ \$100/Landing = \$300  
Waterbar & block unsurfaced roads: 16 Stations @ \$15.96/Station = \$255  
TOTAL Other Costs (No Profit & Risk added) = \$3,995

#### ROAD MAINTENANCE

Move-in: (Grader) \$875  
Final Road Maintenance: \$26,239.47  
TOTAL Road Maintenance: \$27,114.47/2,555 MBF = \$10.61/MBF

#### SLASH DISPOSAL

Project Work: 25 hrs @ \$150/hr = \$3,750  
Weed Wash: \$300  
Move-in: \$1,290  
TOTAL Slash Disposal = \$5,340



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### Logging Conditions

**Combination#: 1**

Douglas - Fir	78.00%
Western Hemlock / Fir	78.00%
Alder (Red)	78.00%

**Logging System:** Cable: Medium Tower >40 - <70      **Process:** Manual Falling/Delimiting

**yarding distance:** Medium (800 ft)      **downhill yarding:** No

**tree size:** Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

**loads / day:** 10      **bd. ft / load:** 4200

**cost / mbf:** \$157.14

**machines:** Log Loader (A)  
Tower Yarder (Medium)

**Combination#: 2**

Douglas - Fir	22.00%
Western Hemlock / Fir	22.00%
Alder (Red)	22.00%

**Logging System:** Track Skidder      **Process:** Manual Falling/Delimiting

**yarding distance:** Short (400 ft)      **downhill yarding:** No

**tree size:** Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

**loads / day:** 14      **bd. ft / load:** 4200

**cost / mbf:** \$75.77

**machines:** Log Loader (B)  
Track Skidder



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**Logging Costs**

<b>Operating Seasons:</b> 3.00	<b>Profit Risk:</b> 10%
<b>Project Costs:</b> \$92,336.00	<b>Other Costs (P/R):</b> \$600.00
<b>Slash Disposal:</b> \$5,340.00	<b>Other Costs:</b> \$3,995.00

**Miles of Road**

**Road Maintenance:** \$10.61

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	4.0
Western Hemlock / Fir	\$0.00	2.0	4.5
Alder (Red)	\$0.00	2.0	3.0



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### Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
<b>Douglas - Fir</b>									
\$139.24	\$10.93	\$5.15	\$122.31	\$0.23	\$27.79	\$2.09	\$2.00	\$1.56	\$311.30
<b>Western Hemlock / Fir</b>									
\$139.24	\$10.93	\$5.15	\$108.73	\$0.23	\$26.43	\$2.09	\$2.00	\$1.56	\$296.36
<b>Alder (Red)</b>									
\$139.24	\$11.03	\$5.15	\$164.66	\$0.23	\$32.03	\$2.09	\$2.00	\$1.56	\$357.99

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$833.77	\$522.47	\$0.00
Western Hemlock / Fir	\$0.00	\$530.24	\$233.88	\$0.00
Alder (Red)	\$0.00	\$662.00	\$304.01	\$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
Alder (Red)	0	\$0.00	\$0.00

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	448	\$522.47	\$234,066.56
Western Hemlock / Fir	1,839	\$233.88	\$430,105.32
Alder (Red)	268	\$304.01	\$81,474.68

**Gross Timber Sale Value**

Recovery: \$745,646.56

Prepared By: Zane Sandborg

Phone: 541-929-3266

## SUMMARY OF ALL PROJECT COSTS

Sale Name: Cool Hand Lucas

Date: December 2021

Time: 7:50

### Project #1 - New Construction

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to B	0.6 sta	\$1,224
C to D	2.2 sta	\$1,053
<b>TOTALS</b>	2.8 sta	\$2,277

### Project #2 - Improvements

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
1 to 2	511.8 sta	\$34,334
3 to 4	0.8 sta	\$693
5 to 6	1.4 sta	\$1,036
7 to 8	38.0 sta	\$12,611
9 to 10	25.2 sta	\$7,428
11 to 12	37.3 sta	\$2,089
<b>TOTALS</b>	614.5 sta	\$58,191

### Project #3 - Brushing

	<u>Length</u>	<u>Cost</u>
Brushing	17.4 mi	\$14,836
Sod and Brush Removal	10.7 mi	\$8,709
<b>TOTAL</b>		\$23,545

### Project #4 - Road Vacating

	<u>Length</u>	<u>Cost</u>
Sta. 13+10 to Pt. 10	12.1 sta	\$3,095
<b>TOTALS</b>	12.1 sta	\$3,095

### Project #5 - Move in

	<u>Cost</u>
Excavator, C325 or equiv.	\$1,450
Backhoe, C580 or equiv.	\$375
Grader, Cat 14-G or equiv.	\$875
Dozer, D6 or equiv.	\$875
Vibratory roller	\$875
Road brusher	\$778
<b>TOTAL</b>	\$5,228

**GRAND TOTAL**

**\$92,336**

Compiled by: Zane Sandborg

Date

12/15/2021



**SUMMARY OF CONSTRUCTION COST**

SALE Cool Hand Lucas Project # 1 LENGTH const 0.6 sta  
 ROAD A to B

**CLEARING AND GRUBBING**

		<u>Rate</u>			
0.04 ac		@ \$1,337.00	/ac	=	\$53
					TOTAL CLEARING AND GRUBBING COST = \$53

**CONSTRUCTION**

		<u>Rate</u>			
Construct road (w/D6)	0.6 sta	@ \$138.00	/sta	=	\$83
Construct Landing (w/ D6) (Pt. B)	1 Ldg	@ \$438.00	/ldg	=	\$438
Import clean waste (from W1)	50 CY	@ \$4.50	/CY	=	\$225
Fill compaction	1.5 hrs	@ \$57.00	/hr	=	\$86
Shape subgrade (w/ road grader)	0.6 sta	@ \$20.63	/sta	=	\$12
Compact subgrade (w/ vibratory roller)	0.6 sta	@ \$16.00	/sta	=	\$10
					TOTAL CONSTRUCTION COST = \$854

**SURFACING**

		<u>Size</u>		<u>Rate</u>	
Junction rock (Sta. 0+00 to Sta. 0+50)	10 CY	Jaw-Run	@ \$29.92	/CY	= \$299
Shape surface (w/ road grader)	0.5 sta		@ \$20.63	/sta	= \$10
Compact surface (w/ vibratory roller)	0.5 sta		@ \$16.00	/sta	= \$8
					TOTAL SURFACING COST = \$317

Compiled by: Zane Sandborg  
 Date: Dec 15, 2021

**GRAND TOTAL =====> \$1,224**

### SUMMARY OF CONSTRUCTION COST

SALE Cool Hand Lucas Project # 1 LENGTH const 2.2 sta  
ROAD C to D

#### CLEARING AND GRUBBING

		<u>Rate</u>			
	0.1 ac	@ \$1,337.00 /ac	=	\$134	
					TOTAL CLEARING AND GRUBBING COST = \$134

#### CONSTRUCTION

		<u>Rate</u>			
Construct road (w/ D6)	2.2 sta	@ \$214.00 /sta	=	\$471	
End haul	100 CY	@ \$2.00 /CY	=	\$200	
Waste compaction	50 CY	@ \$0.45 /CY	=	\$23	
Construct Landing (w/ D6) (Pt. D)	1 hr	@ \$145.00 /hr	=	\$145	
Shape subgrade (w/ road grader)	2.2 sta	@ \$20.63 /sta	=	\$45	
Compact subgrade (w/ vibratory roller)	2.2 sta	@ \$16.00 /sta	=	\$35	
					TOTAL CONSTRUCTION COST = \$919

Compiled by: Zane Sandborg  
Date: Dec 15, 2021

**GRAND TOTAL =====> \$1,053**

**SUMMARY OF CONSTRUCTION COST**

SALE Cool Hand Lucas Project # 2 LENGTH improve 511.8 sta  
 ROAD 1 to 2

**IMPROVEMENT**

				<u>Rate</u>			
Re-establish ditch (Pt. 1 to Pt. 2)	99 sta		@	\$44.00 /sta	=		\$4,356
Re-open landing (w/ C325) (Sta. 505+40)	0.5 hrs		@	\$145.00 /hr	=		\$73
TOTAL IMROVEMENT COST =							\$4,429

**SURFACING**

		<u>Size</u>		<u>Rate</u>			
Spot rock (Sta. 136+50 to Pt. 7)	250 CY	1½" - 0"	@	\$27.82 /CY	=		\$6,955
Surface rock- 2" Lift (Pt. 7 to Sta. 505+40)	210 CY	1½" - 0"	@	\$31.67 /CY	=		\$6,651
Turnout rock (9)	90 CY	3"-0"	@	\$30.67 /CY	=		\$2,760
Landing rock (Sta. 505+40)	10 CY	Jaw-Run	@	\$29.92 /CY	=		\$299
Shape surface (w/ road grader)	56.0 sta		@	\$20.63 /sta	=		\$1,155
Compact surface (w/ vibratory roller)	56.0 sta		@	\$16.00 /sta	=		\$896
TOTAL SURFACING COST =							\$18,716

**SPECIAL PROJECTS**

		<u>Size</u>		<u>Rate</u>			
Culvert (18"x45')	45 ft		@	\$13.75 /ft	=		\$619
Culvert x4 (18"x30')	120 ft		@	\$13.75 /ft	=		\$1,650
Culvert (24"x30')	30 ft		@	\$21.45 /ft	=		\$644
Install culverts	12 hrs		@	\$145.00 /hr	=		\$1,740
Site dewatering	5 hrs		@	\$12.00 /hr	=		\$60
Bedding compaction	6.5 hrs		@	\$57.00 /hr	=		\$371
Bedding & backfill rock	130 CY	1½" - 0"	@	\$31.67 /CY	=		\$4,117
Dissipater rock	50 CY	Pit-Run	@	\$28.67 /CY	=		\$1,434
Armor fill	10 CY	Riprap	@	\$47.90 /CY	=		\$479
Clean out culvert inlets	3 culverts		@	\$25.00 ea	=		\$75
TOTAL SPECIAL PROJECTS COST =							\$11,189

Compiled by: Zane Sandborg  
 Date: Dec 15, 2021

**GRAND TOTAL =====> \$34,334**

**SUMMARY OF CONSTRUCTION COST**

SALE Cool Hand Lucas Project # 2 LENGTH improve 0.8 sta  
 ROAD 3 to 4

**IMPROVEMENT**

Re-open Landing (w/ grader) 0.5 hrs @ \$114.00 /hr = \$57

TOTAL IMPROVEMENT COST = \$57

**SURFACING**

		<u>Size</u>	<u>Rate</u>			
Surface rock- 2" Lift	10 CY	3"-0"	@ \$30.67	/CY	=	\$307
Landing rock (Pt. 4)	10 CY	Jaw-Run	@ \$29.92	/CY	=	\$299
Shape surface (w/ road grader)	0.8 sta		@ \$20.63	/sta	=	\$17
Compact surface (w/ vibratory roller)	0.8 sta		@ \$16.00	/sta	=	\$13

TOTAL SURFACING COST = \$636

Compiled by: Zane Sandborg  
 Date: Dec 15, 2021

**GRAND TOTAL =====> \$693**

**SUMMARY OF CONSTRUCTION COST**

SALE Cool Hand Lucas Project # 2 LENGTH improve 1.4 sta  
ROAD 5 to 6

**IMPROVEMENT**

Re-open Landing (w/ C325) 0.5 hrs @ Rate \$145.00 /hr = \$73

TOTAL IMPROVEMENT COST = \$73

**SURFACING**

Surface rock- 2" Lift 20 CY Size 3"-0" @ Rate \$30.67 /CY = \$613  
Landing rock (Pt. 6) 10 CY Jaw-Run @ \$29.92 /CY = \$299  
Shape surface 1.4 sta @ \$20.63 /sta = \$29  
(w/ road grader)  
Compact surface 1.4 sta @ \$16.00 /sta = \$22  
(w/ vibratory roller)

TOTAL SURFACING COST = \$963

Compiled by: Zane Sandborg  
Date: Dec 15, 2021

**GRAND TOTAL =====> \$1,036**

**SUMMARY OF CONSTRUCTION COST**

SALE Cool Hand Lucas Project # 2 LENGTH improve 38 sta  
 ROAD 7 to 8

**CONSTRUCTION**

			<u>Rate</u>			
Construct Landing (Sta. 15+00)	1 Ldg	@	\$438.00	/Ldg	=	\$438
Shape subgrade (w/ road grader)	0.5 sta	@	\$20.63	/sta	=	\$10
Compact subgrade (w/ vibratory roller)	0.5 sta	@	\$16.00	/sta	=	\$8
TOTAL CONSTRUCTION COST =						\$456

**IMPROVEMENT**

			<u>Rate</u>			
Re-establish ditch (Pt. B13 to Sta. 10+60 & Pt. 9 to Sta. 30+40)	12 sta	@	\$44.00	/sta	=	\$528
Re-open Landings (w/ D6) (Sta. 4+80, 10+60 & 18+10)	1 hr	@	\$128.00	/hr	=	\$128
TOTAL IMPROVEMENT COST =						\$656

**SURFACING**

		<u>Size</u>		<u>Rate</u>		
Surface rock- 2" Lift (Pt. 7 to Pt. 9)	250 CY	1½" - 0"	@	\$31.67	/CY	= \$7,918
Landing rock (Sta. 4+80, 10+60, 15+00, 18+10)	40 CY	Jaw-Run	@	\$29.92	/CY	= \$1,197
Shape surface (Pt. 7 to Pt. 9) (w/ road grader)	22.3 sta		@	\$20.63	/sta	= \$460
Compact surface (Pt. 7 to Pt. 9) (w/ vibratory roller)	22.3 sta		@	\$16.00	/sta	= \$357
TOTAL SURFACING COST =						\$9,932

**SPECIAL PROJECTS**

		<u>Size</u>		<u>Rate</u>		
Culvert (18"x 30')	30 ft		@	\$13.75	/ft	= \$413
Install culvert (Sta. 11+60)	1.5 hrs		@	\$145.00	/hr	= \$218
Bedding compaction	1 hrs		@	\$57.00	/hr	= \$57
Bedding & backfill rock	20 CY	1½" - 0"	@	\$31.67	/CY	= \$633
Construct ditchouts (Pt. 7 to Pt. B13)	0.5 hrs		@	\$145.00	/hr	= \$73
Clean out ditchout (Sta. 15+00)	0.5 hrs		@	\$145.00	/hr	= \$73
Repair culvert (Sta. 28+30)	1 culverts		@	\$25.00	ea	= \$25
Clean out culvert inlets	3 culverts		@	\$25.00	ea	= \$75
TOTAL SPECIAL PROJECTS COST =						\$1,567

Compiled by: Zane Sandborg  
 Date: Dec 15, 2021

**GRAND TOTAL =====> \$12,611**

**SUMMARY OF CONSTRUCTION COST**

SALE Cool Hand Lucas Project # 2 LENGTH improve 25.2 sta  
 ROAD 9 to 10

**CLEARING AND GRUBBING**

		<u>Rate</u>			
	0.6 ac	@ \$1,337.00 /ac	=	\$802	
				TOTAL CLEARING AND GRUBBING COST =	\$802

**CONSTRUCTION**

			<u>Rate</u>		
Cutbank excavation (expanded 20%) (Sta. 7+50 to Sta. 9+60)	220 CY	@ \$2.50 /CY	=	\$550	
Sidecast removal (expanded 20%) (Sta. 7+50 to Sta. 9+60)	520 CY	@ \$2.50 /CY	=	\$1,300	
Slough removal (expanded 20%) (Sta. 9+60 to Sta. 12+60)	60 CY	@ \$2.50 /CY	=	\$150	
Road prism excavation (w/ C325)	8 hrs	@ \$145.00 /hr	=	\$1,160	
Waste compaction	800 CY	@ \$0.45 /CY	=	\$360	
Shape subgrade (w/ road grader)	13.1 sta	@ \$20.63 /sta	=	\$270	
Compact subgrade (w/ vibratory roller)	13.1 sta	@ \$16.00 /sta	=	\$210	
				TOTAL CONSTRUCTION COST =	\$4,000

**IMPROVEMENT**

			<u>Rate</u>		
Re-open road (w/ D6) (Pt. 6 to Sta. 13+10)	13.1 sta	@ \$36.67 /sta	=	\$480	
Re-open Landings (w/ D6) (Sta. 1+70, 6+20 & 12+60)	1 hrs	@ \$128.00 /hr	=	\$128	
Re-open waste area (w/ D6) (Sta. 6+20)	0.5 hrs	@ \$128.00 /hr	=	\$64	
Debris removal (Sta. 13+10 to Sta. 20+00)	1.5 hrs	@ \$145.00 /hr	=	\$218	
				TOTAL IMPROVEMENT COST =	\$890

**SURFACING**

		<u>Size</u>		<u>Rate</u>	
Junction rock (Sta. 0+00 to Sta. 0+50)	10 CY	Jaw-Run	@	\$29.92 /CY	= \$299
Patch rock (Pt. C)	10 CY	Jaw-Run	@	\$29.92 /CY	= \$299
Shape surface (w/ grader)	1.0 sta		@	\$20.63 /sta	= \$21
Compact surface (w/ vibratory roller)	1.0 sta		@	\$16.00 /sta	= \$16
				TOTAL SURFACING COST =	\$635

**SPECIAL PROJECTS**

		<u>Size</u>		<u>Rate</u>	
Excavate fill and backfill (w/ C325) (Sta. 3+25)	3 hrs		@	\$145.00 /hr	= \$435
Fill compaction	2 hrs		@	\$57.00 /hr	= \$114
Armor rock	10 CY	Riprap	@	\$47.90 /CY	= \$479
Place armor rock (w/ C325)	0.5 hrs		@	\$145.00 /hr	= \$73
				TOTAL SPECIAL PROJECTS COST =	\$1,101

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 Date: Dec 15, 2021

**GRAND TOTAL =====> \$7,428**

**SUMMARY OF CONSTRUCTION COST**

SALE Cool Hand Lucas Project # 2 LENGTH improve 37.3 sta  
 ROAD 11 to 12

**IMPROVEMENT**

			<u>Rate</u>			
Reopen waste area (w/ C325) (Sta. 9+30)	0.5 hrs	@	\$145.00 /hr	=		\$73
Re-establish ditch (Pt. 11 tp Pt. 12)	33 sta	@	\$44.00 /sta	=		\$1,452
End haul waste	130 CY	@	\$3.50 /CY	=		\$455
Waste compaction	130 CY	@	\$0.45 /CY	=		\$59
TOTAL IMPROVEMENT COST =						\$2,039

**SPECIAL PROJECTS**

		<u>Size</u>	<u>Rate</u>			
Clean out culvert inlets	2 culverts	@	\$25.00 ea	=		\$50
TOTAL SPECIAL PROJECTS COST =						\$50

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**GRAND TOTAL =====> \$2,089**



**SUMMARY OF BRUSHING AND SOD & DEBRIS REMOVAL COST**

SALE Cool Hand Lucas Project # 3 LENGTH maintain 17.4 Miles  
ROAD All (Surfaced/unsurfaced)

**LIGHT BRUSHING**

			<u>Rate</u>			
Pt. 1 to Pt. B20	6.71 mi	@	\$800.00 /mi	=		\$5,368
Sta. 386+10 to Pt. 2	3.14 mi	@	\$800.00 /mi	=		\$2,512
Pt. 3 to Pt. 4	0.02 mi	@	\$800.00 /mi	=		\$16
Pt. 5 to Pt. 6	0.03 mi	@	\$800.00 /mi	=		\$24
Pt. 7 to Pt. 8	0.72 mi	@	\$800.00 /mi	=		\$576
Pt. 9 to Pt. 10	0.25 mi	@	\$800.00 /mi	=		\$200
Pt. 11 to Pt. 12	0.71 mi	@	\$800.00 /mi	=		\$568
Pt. B13 to Pt. B14	0.03 mi	@	\$800.00 /mi	=		\$24
Pt. B15 to Pt. B16	0.03 mi	@	\$800.00 /mi	=		\$24
Pt. 11 to Pt. B17	0.29 mi	@	\$800.00 /mi	=		\$232
Pt. B18 to Pt. B19	0.39 mi	@	\$800.00 /mi	=		\$312
Pt. B20 to Pt. B21	1.06 mi	@	\$800.00 /mi	=		\$848
Pt. B24 to Pt. B25	0.28 mi	@	\$800.00 /mi	=		\$224
Pt. B26 to Pt. B27	0.18 mi	@	\$800.00 /mi	=		\$144
Pt. B32 to Pt. B33	0.46 mi	@	\$800.00 /mi	=		\$368
Pt. B34 to Pt. B35	0.12 mi	@	\$800.00 /mi	=		\$96

TOTAL LENGTH = 14.42 mi

TOTAL LIGHT BRUSHING COST = \$11,536

**MEDIUM BRUSHING**

			<u>Rate</u>			
Pt. B22 to Pt. B24	1.95 mi	@	\$1,100.00 /mi	=		\$2,145
Pt. B28 to Pt. B29	0.64 mi	@	\$1,100.00 /mi	=		\$704
Pt. B30 to Pt. B31	0.41 mi	@	\$1,100.00 /mi	=		\$451

TOTAL LENGTH = 3.00 mi

TOTAL MEDIUM BRUSHING COST = \$3,300

**BRUSHING GRAND TOTAL =====> \$14,836**

**SOD AND DEBRIS REMOVAL**

			<u>Rate</u>			
All brushing segments (Except for Pt. 1 to Pt. B20)	10.71 mi	@	\$813.12 /mi	=		\$8,709

**TOTAL SOD AND DEBRIS REMOVAL =====> \$8,709**

Compiled by: Zane Sandborg  
Date: Dec 15, 2021

**SUMMARY OF VACATING COST**

SALE Cool Hand Lucas Project # 4 LENGTH improve 25.2 sta  
 ROAD 9 to 10

**ROAD VACATE**

			<u>Rate</u>			
Sidecast pullback (Sta. 13+10 to Pt. 10)	9 hrs	@	\$145.00	/hr	=	\$1,305
Re-establish channel (w/ C325) (Sta. 16+90, 17+50 & 20+00)	7 hrs	@	\$145.00	/hr	=	\$1,015
Compact waste material	1 hr	@	\$145.00	/hr	=	\$145

TOTAL IMPROVEMENT COST = \$2,465

**SPECIAL PROJECTS**

		<u>Size</u>		<u>Rate</u>		
Grass seed	100 lbs.		@	\$1.80	/lb	= \$180
Mulch	15 bales		@	\$12.00	/bale	= \$180
Labor	6 hrs.		@	\$45.00	/hr	= \$270

TOTAL SPECIAL PROJECTS COST = \$630

Compiled by: Zane Sandborg  
 Date: Dec 15, 2021

**GRAND TOTAL =====> \$3,095**







## TIMBER CRUISE REPORT

### Cool Hand Lucas (WO-341-2022-W00899-01) FY 2022

1. **Sale Area Location:** Portions of Sections 28 & 29, T9S, R8W, Polk County, Oregon.

2. **Fund Distribution:**

a. **Fund** BOF 100%

3. **Sale Acreage by Area:**

Unit	Treatment	Gross Acres	Stream Buffers	Existing Roads	No-Harvest-Slope	Net Sale Acres	Acreage Comp. Method
1	Modified Clearcut	87	7	5	1	74	GIS

4. **Cruisers and Cruise Dates:** This sale was cruised by Zane Sandborg, David Bailey, and Cody Valencia in July and August of 2021.

5. **Cruise Method and Computation:** The sale consists of one Modified clearcut unit that was cruised using variable radius plot sampling. The timber sale area was cruised using a basal area factor of 40. Plots were spaced on a 4x6 chain grid.

Measure plots were measured for DBH, height, form factor, grade, and defect. Data was entered into the Atterbury Super ACE cruise program to determine stand statistics and net board foot volume. Additional volume was removed to account for hidden defect and breakage.

Digital ortho photos, Lidar data, and GPS data were used to map the boundaries for the sale, and ArcMap GIS was used to determine gross and net acreage.

6. **Measurement Standards:** Tree heights were measured to the nearest foot, to a top diameter of 6 inches inside bark or to 40% of form factor. Diameters at breast height (DBH) were measured to the nearest inch, and a form point of 16 feet was used to calculate form factor. Form factors were measured or estimated on every tree. Most trees were graded in 40 foot log segments unless breakage, defect, or length to top of grade cruise diameter warranted otherwise.

7. **Timber Description:** Timber is primarily 65 year-old Western hemlock with a component of Douglas-fir and red alder and scattered Western redcedar. The average Western hemlock to be removed is approximately 18 inches DBH, with an average height of 59 feet to a merchantable top. The average Douglas-fir to be removed is approximately 25 inches DBH, with an average height of 100 feet to a merchantable top. The average volume per acre to be harvested (net) is approximately 35.0 MBF. Western redcedar and Sitka spruce are reserved from cutting, unless present in yarding corridors, Landings or between R/W tags.

8. **Statistical Analysis and Stand Summary:** (See attached “Statistics”).

Unit	Target CV	Target SE	Actual CV	Actual SE
1	36%	9%	35.0%	7.3%

Note: Statistics shown are for conifer and hardwood trees combined. Percentages are for net board foot volume.

9. **Total Volume (MBF) by Species and Grade:** (See attached volume report “Species, Sort Grade – Board Foot Volumes - Project”).

Species	Gross Cruise Volume	Cruised D & B	Cruised D & B (MBF)	Hidden D & B	Hidden D & B (MBF)	Net Sale Volume
Western Hemlock	1,882	1.3%	(24)	1%	(19)	1839
Douglas-fir	458	1.2%	(5)	1%	(5)	448
Red Alder	277	1.2%	(3)	2%	(6)	268
<b>Total</b>	<b>2,617</b>	<b>1%</b>	<b>(32)</b>	<b>1%</b>	<b>(30)</b>	<b>2,555</b>

Species	Avg. DBH	Tot. Net Vol.	2-Saw	3-Saw	4-Saw	Camp Run
Western Hemlock	18	Grade %	73%	22%	5%	-
		1,839	1,342	405	92	-
Douglas-fir	25	Grade %	89%	9%	2%	-
		448	399	40	9	-
Red Alder	14	Grade %	-	-	-	100%
		268	-	-	-	268
<b>Total</b>		2,555	1,741	445	101	268

- Attachments: -Cruise Design  
 -Cruise Maps  
 -Statistics  
 -Species, Sort, Grade – Board Foot Volume  
 -Stand Table Summary  
 -Log Stock Table – MBF

Prepared by: Zane Sandborg

Date: 09/07/2021

Unit Forester:   
 Evelyn Hukari

Date: 9/7/2021

TC PSTATS		<b>PROJECT STATISTICS</b>							PAGE	<b>1</b>	
		PROJECT		COOLHL			DATE		9/7/2021		
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
09S	08	28	A1	00MC	74.00	23	126	1	W		
		PLOTS		TREES	TREES	ESTIMATED TOTAL	PERCENT SAMPLE				
				PER PLOT	TREES	TREES	TREES				
TOTAL		23		126	5.5						
CRUISE		23		126	5.5	9,757	1.3				
DBH COUNT		REFOREST		COUNT		BLANKS		100 %			
<b>STAND SUMMARY</b>											
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		88	86.9	18.0	59	36.1	153.0	25,439	25,111	6,358	
R ALDER		21	36.3	13.6	47	9.9	36.5	3,744	3,700	1,139	
DF		17	8.6	25.0	100	5.9	29.6	6,192	6,120	1,440	
<b>TOTAL</b>		<b>126</b>	<b>131.9</b>	<b>17.5</b>	<b>58</b>	<b>52.4</b>	<b>219.1</b>	<b>35,375</b>	<b>34,931</b>	<b>8,937</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
67.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	67.1	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		67.4	7.0	507	545	584					
R ALDER		53.0	11.6	100	113	126					
DF		52.0	12.7	705	808	911					
<b>TOTAL</b>		<b>77.8</b>	<b>6.8</b>	<b>474</b>	<b>509</b>	<b>543</b>	<b>233</b>	<b>58</b>	<b>26</b>		
CL	67.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		78.3	16.3	73	87	101					
R ALDER		131.2	27.4	26	36	46					
DF		130.3	27.2	6	9	11					
<b>TOTAL</b>		<b>62.3</b>	<b>13.0</b>	<b>115</b>	<b>132</b>	<b>149</b>	<b>156</b>	<b>39</b>	<b>17</b>		
CL	67.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		50.2	10.5	137	153	169					
R ALDER		127.5	26.6	27	37	46					
DF		123.8	25.9	22	30	37					
<b>TOTAL</b>		<b>25.7</b>	<b>5.4</b>	<b>207</b>	<b>219</b>	<b>231</b>	<b>27</b>	<b>7</b>	<b>3</b>		
CL	67.1	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		54.3	11.3	22,262	25,111	27,961					
R ALDER		139.1	29.1	2,625	3,700	4,775					
DF		122.1	25.5	4,559	6,120	7,681					
<b>TOTAL</b>		<b>34.8</b>	<b>7.3</b>	<b>32,392</b>	<b>34,931</b>	<b>37,470</b>	<b>49</b>	<b>12</b>	<b>5</b>		



**Species, Sort Grade - Board Foot Volumes (Project)**

T09S R08W S28 Ty00MC      74.00	<b>Project: COOLHL</b> <b>Acres 74.00</b>	<b>Page 1</b> <b>Date 9/7/2021</b> <b>Time 7:42:53AM</b>
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S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%    Gross    Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
WH	DO	2M	73	1.2	18,620	18,392	1,361			37	63	1		2	97	39	16	402	2.35	45.7
WH	DO	3M	22	.9	5,629	5,580	413		100			1	1	5	93	38	8	91	0.76	61.2
WH	DO	4M	5	4.2	1,190	1,140	84		100			66	34			18	6	24	0.45	47.5
<b>WH</b>	<b>Totals</b>		72	1.3	25,439	25,111	1,858		27	27	46	4	2	3	92	32	10	163	1.28	154.5
DF	DO	2M	89	1.2	5,514	5,448	403			41	59				100	40	16	396	2.23	13.8
DF	DO	3M	9	1.0	566	561	41		100				16	11	72	34	8	84	0.81	6.7
DF	DO	4M	2		112	112	8		100			81	19			16	7	26	0.58	4.3
<b>DF</b>	<b>Totals</b>		18	1.2	6,192	6,120	453		11	36	53	1	2	1	96	34	12	248	1.71	24.7
RA	DO	CU														24	12		0.00	1.2
RA	DO	CR	100	1.2	3,744	3,700	274		96	4		12	17	20	51	29	8	68	0.71	54.3
<b>RA</b>	<b>Totals</b>		11	1.2	3,744	3,700	274		96	4		12	17	20	51	29	8	67	0.70	55.5
<b>Totals</b>				1.3	35,375	34,931	2,585		31	26	42	4	3	4	88	32	10	149	1.20	234.6

TC		PSTNDSUM		Stand Table Summary							Page		1			
											Date:		9/7/2021			
T09S R08W S28 Ty00MC				74.00		Project			COOLHL		Time:		7:42:53AM			
				Acres			74.00				Grown Year:					
S Spc	T	DBH	Sample Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
WH		8	1	86	26	4.982	1.74	4.98	5.0	10.0		25	50		18	4
WH		9	3	88	61	11.810	5.22	11.81	11.0	43.3		130	512		96	38
WH		10	2	86	69	6.377	3.48	6.38	15.5	55.0		99	351		73	26
WH		11	2	86	59	5.270	3.48	5.27	15.0	45.0		79	237		59	18
WH		12	3	86	61	6.643	5.22	6.64	20.7	60.0		137	399		102	29
WH		13	2	87	73	3.774	3.48	5.66	19.3	60.0		109	340		81	25
WH		15	4	87	60	5.669	6.96	7.09	25.4	68.0		180	482		133	36
WH		16	5	87	72	6.228	8.70	9.96	25.3	83.8		252	835		186	62
WH		17	2	86	104	2.207	3.48	5.52	27.6	96.0		152	530		113	39
WH		18	4	88	102	3.937	6.96	9.84	30.7	107.0		302	1,053		224	78
WH		19	2	88	106	1.767	3.48	4.42	35.2	126.0		155	556		115	41
WH		20	1	86	123	.797	1.74	2.39	37.0	140.0		88	335		65	25
WH		21	6	88	108	4.338	10.43	10.12	48.2	188.6		488	1,909		361	141
WH		22	3	88	113	1.976	5.22	5.27	46.5	185.0		245	975		181	72
WH		23	3	89	103	1.808	5.22	4.22	54.6	212.9		230	898		170	66
WH		24	7	88	115	3.875	12.17	11.07	54.2	228.5		600	2,530		444	187
WH		25	6	86	112	3.061	10.43	9.18	53.4	218.9		491	2,010		363	149
WH		26	9	87	114	4.245	15.65	11.79	60.3	254.0		711	2,995		526	222
WH		27	1	86	123	.437	1.74	1.31	67.7	290.0		89	381		66	28
WH		28	5	88	112	2.034	8.70	6.10	68.7	297.3		419	1,814		310	134
WH		29	5	89	107	1.896	8.70	4.55	88.0	381.7		400	1,736		296	129
WH		30	3	85	115	1.063	5.22	3.19	77.7	331.1		248	1,056		183	78
WH		31	3	88	111	.995	5.22	2.65	92.2	411.2		245	1,092		181	81
WH		32	4	86	112	1.246	6.96	3.74	86.5	362.5		323	1,355		239	100
WH		34	1	86	123	.276	1.74	.83	105.0	493.3		87	408		64	30
WH		37	1	82	105	.233	1.74	.47	154.5	590.0		72	275		53	20
WH		Totals	88	87	81	86.943	153.04	154.45	41.2	162.6		6,358	25,111		4,705	1,858
DF		19	1	89	117	.883	1.74	2.65	30.0	110.0		79	291		59	22
DF		21	2	86	123	1.446	3.48	3.62	44.8	170.0		162	615		120	45
DF		22	1	87	115	.659	1.74	1.98	39.0	160.0		77	316		57	23
DF		24	2	87	129	1.107	3.48	2.77	59.8	244.0		166	675		122	50
DF		25	1	88	139	.510	1.74	1.53	60.0	266.7		92	408		68	30
DF		26	2	88	133	.943	3.48	2.83	62.5	268.3		177	759		131	56
DF		27	3	87	133	1.312	5.22	3.94	67.2	288.9		265	1,137		196	84
DF		28	3	88	122	1.220	5.22	3.66	67.9	291.1		249	1,066		184	79
DF		31	1	86	113	.332	1.74	1.00	76.3	336.7		76	335		56	25
DF		37	1	88	151	.233	1.74	.70	140.7	740.0		98	517		73	38
DF		Totals	17	87	126	8.646	29.57	24.66	58.4	248.2		1,440	6,120		1,066	453
RA		11	3	87	89	7.906	5.22	13.18	13.8	48.0		182	632		135	47
RA		12	3	87	78	6.643	5.22	8.86	17.2	55.0		153	487		113	36
RA		13	4	87	68	7.547	6.96	9.43	21.4	64.0		202	604		149	45
RA		14	2	86	74	3.254	3.48	4.88	22.3	73.3		109	358		81	26
RA		15	3	86	82	4.252	5.22	7.09	26.2	90.0		186	638		137	47
RA		16	3	87	72	3.737	5.22	4.98	26.5	80.0		132	399		98	29
RA		17	2	86	83	2.207	3.48	4.41	28.7	97.5		127	430		94	32
RA		21	1	87	61	.723	1.74	1.45	34.0	105.0		49	152		36	11
RA		Totals	21	87	78	36.267	36.52	54.28	21.0	68.2		1,139	3,700		843	274
Totals			126	87	83	131.857	219.13	233.39	38.3	149.7		8,937	34,931		6,613	2,585



**Log Stock Table - MBF**

T09S R08W S28 Ty00MC 74.00

**Project: COOLHL**  
**Acres 74.00**

**Page 2**  
**Date 9/7/2021**  
**Time 7:42:53AM**

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+
DF		Totals		458	1.2	453	17.5			11	29	11	90	58	180	52	24		
RA		DO	CR	12		3	3	1.0			3								
RA		DO	CR	16		16	16	6.0			16								
RA		DO	CR	18		4	4	1.4			1	3							
RA		DO	CR	20		9	9	3.5			9								
RA		DO	CR	24		8	8	2.9			8								
RA		DO	CR	28		26	26	9.4			4	10	12						
RA		DO	CR	30		11	11	4.2				11							
RA		DO	CR	32		46	3.5	45	16.3		8	26		10					
RA		DO	CR	34		12	13.3	11	3.9				11						
RA		DO	CR	36		12		12	4.3		12								
RA		DO	CR	38		24		24	8.9		10		15						
RA		DO	CR	40		105		105	38.3		37	20	47						
RA		Totals				277	1.2	274	10.6		109	70	84	10					
Total		All Species				2,618	1.3	2,585	100.0		344	194	273	319	308	663	423	61	



**Sale Number**  
 WO-341-2022-W00899-01

**Sale Name**  
 Cool Hand Lucas

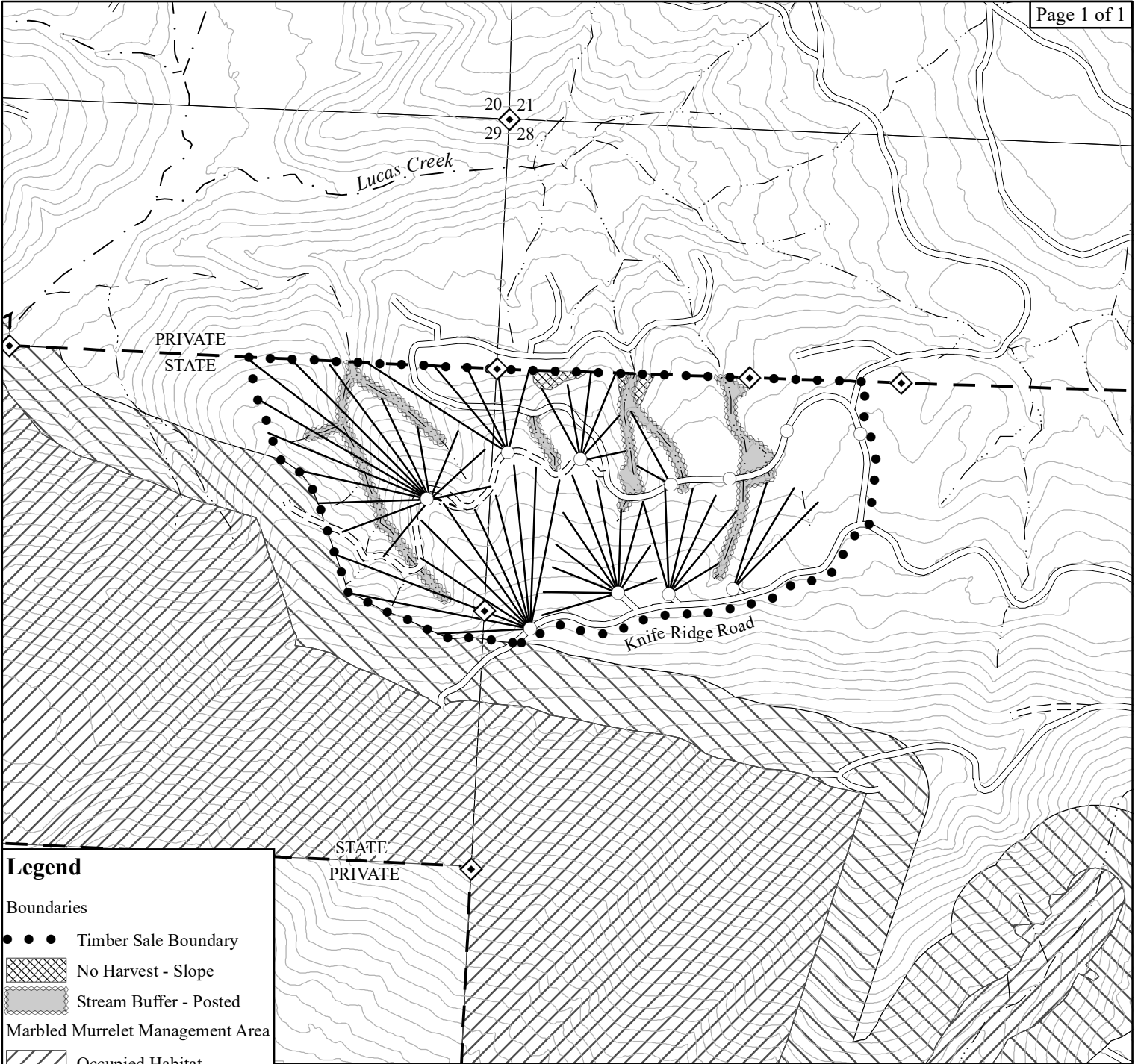
**Expiration Date**  
 December 31, 2024

Harvesting	Comments	Units	Project	Operational Periods												Date				
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
Ground yarding				1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	

Hauling	Comments	Units	Project	Operational Periods												Date				
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
Log Hauling on Unsurfaced Roads				1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	

Project Work	Comments	Units	Project	Operational Periods												Date				
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
Non-project roads and landings				1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	
Activity in Live Streams																				
Road improvement and construction																				

Operation Allowed    
  Operation Restricted    
  Activity Restricted 2 hours before sunset and 2 hours after sunrise



**Legend**

**Boundaries**

- ● ● Timber Sale Boundary
- ▨ No Harvest - Slope
- ▨ Stream Buffer - Posted

**Marbled Murrelet Management Area**

- ▨ Occupied Habitat
- ▨ Non-Habitat Buffer

**Ownership**

- — — Ownership

**Roads**

- ==== Surfaced Road
- ==== Unsurfaced Road
- - - New Construction
- ==:== Right-of-Way (Posted)

**Streams**

- - · Type F Stream
- · · Type N Stream
- Cable Corridor

- Landing
- ◇ Land Survey Monument

**LOGGING PLAN**  
 OF TIMBER SALE CONTRACT NO. WO-341-2022-W00899-01  
 COOL HAND LUCAS  
 PORTIONS OF SECTIONS 28 & 29 T9S, R8W, W.M.,  
 POLK COUNTY, OREGON.

	NET CABLE UNIT ACRES	NET GROUND ACRES
1 (MC)	58	16
<b>TOTAL</b>	<b>58</b>	<b>16</b>

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