

# Timber Sale Appraisal Hakki Headwaters Sale CS-341-2017-51-

District: Coos Date: April 07, 2017

# **Cost Summary**

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$455,661.03	\$143,384.03	\$599,045.06
		Project Work:	(\$17,093.00)
		Advertised Value:	\$581,952.06



Sale CS-341-2017-51-

District: Coos Date: April 07, 2017

# **Timber Description**

Location: Portions of Section 16, T22S, R11W, W.M., Douglas County, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	17	0	95
Western Hemlock / Fir	14	0	95
Alder (Red)	18	0	90
Maple	16	0	90

Volume by Grade	<b>2</b> S	3S	<b>4</b> S	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	438	501	344	0	0	0	0	1,283
Western Hemlock / Fir	7	23	19	0	0	0	0	49
Alder (Red)	0	0	0	31	114	222	72	439
Maple	0	0	0	0	28	9	13	50
Total	445	524	363	31	142	231	85	1,821

**Comments:** Pond Values Used: 1st Quarter Calendar Year 2017 + Local Pond Values.

Local Pond Values used for Bigleaf Maple.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:

\$838.96/MBF = \$1,175/MBF - \$336.04/MBF

Regeneration harvest containing approximately 99 acres of 47-48 year-old Douglas-fir, hemlock, and red alder/bigleaf maple mix with a minor amount of redcedar.

SCALING COST ALLOWANCE = \$5.00/MBF

BRANDING AND PAINTING COST ALLOWANCE = \$2.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

HAULING COST ALLOWANCE:

Hauling costs equivalent to \$780 daily truck cost.

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

FELLING:

Felling of Unmerchantable Material: \$3/acre x 80 acres = \$240

YARDING AND LOADING:

Cull Sorting / Slash Piling / Landing Cleanup: \$125/landing x 5 landings = \$625

Rig Tail/Lift Trees: \$150/lift tree x 4 lift trees = \$600 Artificial Guy Anchors: \$500/anchor x 1 anchor = \$500 Cover Landing Slash Piles: \$50/pile x 5 piles = \$250

MISCELLANEOUS COSTS

Maintenance Spot Rocking (Section 2130): \$32.59/yard x 100 yards = \$3,259

Grader Move-in: \$500/grader x 1 grader = \$500

Road Maintenance Haul Route Outside Sale Area, Point J to Dean Creek Road, grade, shape, pull ditches:

24.83/station x 84 stations = 2.086

TOTAL Other Costs (with Profit & Risk to be added) = \$8,060

Other Costs (No Profit & Risk added):

None.

4/07/17



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#### **Logging Conditions**

Combination#: 1 Douglas - Fir 100.00%

 Western Hemlock / Fir
 100.00%

 Alder (Red)
 100.00%

 Maple
 100.00%

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

tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

loads / day: 10 bd. ft / load: 3800

cost / mbf: \$157.90

machines: Log Loader (A)

Stroke Delimber (A)
Tower Yarder (Medium)



Sale CS-341-2017-51-

District: Coos Date: April 07, 2017

# **Logging Costs**

**Operating Seasons: 1.00** 

Profit Risk: 20%

**Project Costs:** \$17,093.00

Other Costs (P/R): \$8,060.00

Slash Disposal: \$0.00 Other Costs: \$0.00

Miles of Road

Road Maintenance:

\$0.00

Dirt	Rock (Contractor)	Rock (State)	Paved
1.0	1.0	0.0	0.0

#### Hauling Costs

Species	\$/MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	3.8
Western Hemlock / Fir	\$0.00	2.0	3.8
Alder (Red)	\$0.00	2.0	3.0
Maple	\$0.00	2.0	3.0



Sale CS-341-2017-51-

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# **Logging Costs Breakdown**

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling / Brand & Paint	Other	Total
Douglas -	Fir								
\$157.90	\$1.70	\$2.41	\$107.76	\$4.43	\$54.84	\$0.00	\$7.00	\$0.00	\$336.04
Western H	emlock .	/ Fir							
\$157.90	\$1.70	\$2.41	\$107.76	\$4.43	\$54.84	\$0.00	\$7.00	\$0.00	\$336.04
Alder (Red	)				_				
\$157.90	\$1.78	\$2.41	\$143.00	\$4.43	\$61.90	\$0.00	\$7.00	\$0.00	\$378.42
Maple					_				
\$157.90	\$1.78	\$2.41	\$143.00	\$4.43	\$61.90	\$0.00	\$7.00	\$0.00	\$378.42

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$684.51	\$348.47	\$0.00
Western Hemlock / Fir	\$0.00	\$511.02	\$174.98	\$0.00
Alder (Red)	\$0.00	\$687.19	\$308.77	\$0.00
Maple	\$0.00	\$535.10	\$156.68	\$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
Maple	0	\$0.00	\$0.00

#### Unamortized

Specie	MBF	Value	Total
Douglas - Fir	1,283	\$348.47	\$447,087.01
Western Hemlock / Fir	49	\$174.98	\$8,574.02
Alder (Red)	439	\$308.77	\$135,550.03
Maple	50	\$156.68	\$7,834.00

#### **Gross Timber Sale Value**

**Recovery:** \$599,045.06

Prepared By: Jon Haynes Phone: 541-267-1758

# Summary of "Other Costs" for Timber Sale Appraisals

Sale Name: Hakki Headwaters

Additional "Other Cost" with additional profit and risk to be added:

Felling	<u>Units</u>	Quantity	Cost/unit	nit	임	Total Cost
Felling of unmerch material	acre	ю	↔	80.00	↔	240.00
Yarding and Loading Cull sorting/slash piling/landing cleanup Rio tail/lift trees	landing lift tree	<b>τ</b> 4	÷ ÷	125.00	<del>6</del> 6	625.00
Artificial guy anchors(dozer, skidder)	anchor	_	2	500.00	· <del>6</del>	500.00
Cover landing slash piles w/sheeting	landing	5	\$	20.00	<del>⇔</del>	250.00
Miscellaneous Costs						
Maintenance rock (Section 2130)	yards	100	s	32.59	↔	3,259.00
Grader Move-in	grader	_	\$	500.00	<del>s</del>	200.00
Road Maintenance Haul Route Outside Sale Area Point J to Dean Creek Rd. grade, shape, pull ditches	station	84	↔	24.83	↔	2,085.72
Total additional "Other Cost" with additional profit and risk to be added	be added				\$	8,059.72

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	Units	Quantity	Cost/unit	<u>unit</u>	Total Cos	띪
Non-required road construction	Stations				\$	
Non-required road rocking	<b>Cubic Yards</b>				\$	
Stream clearance	Feet				\$	
Scaling (high piece count)	MBF		↔	2.00	\$	
					\$	

Total additional "Other Cost" with no additional profit and Risk

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#### **Summary of Construction Costs Hakki Headwaters**

<b>Project</b>	1A:	Landing	Construction
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Points:	G, H, I, J	Length:	n/a	Type:	n/a		
	Excavator	_	10	hrs at	\$175.00	per hour	\$1,750.00
	Cat time		10	hrs at	\$155.00	per hour	\$1,550.00
	Laborer		10	hrs at	\$38.00	per hour	\$380.00
	Dump Truck		10	hrs at	\$100.00	per hour	\$1,000.00

Total Project 1A: \$4,680.00

#### **Project 1B: Road and Landing Construction**

Points:	E - F	Length:	161	туре	: 14 no ditch		
	Excavator		6	hrs at	\$175.00	per hour	\$1,050.00
	Cat time		6	hrs at	\$155.00	per hour	\$930.00
	Grader		1	hrs at	\$85.00	per hour	\$85.00
	Laborer	_	6	hrs at	\$38.00	per hour	\$228.00
	Dump Truck	_	6	hrs at	\$100.00	per hour	\$600.00

Total Project 1B: \$2,893.00

#### Move-in

#### Lowb or Equp

Equipment	Miles	hrs/RT	Rate/hr	Total
Excavator	35	7	\$125.00	\$875.00
Cat	35	7	\$125.00	\$875.00
Dump Truck	35	5	\$100.00	\$500.00
Grader	35	6	\$125.00	\$750.00

Total Move-In \$3,000.00

Project 1 Total \$10,573.00

#### **Project 2A: Road Improvement**

Points:	B - E	Length:	1114'	Туре	: 14' with ditch		
Excava	tor - cleanup	, brushing _	3	hrs at	\$175.00	per hour	\$525.00
Cat time - sm	ooth road su	rface & process	3	hrs at	\$155.00	per hour	\$465.00
Dump Truck -	haul materia	al to waste areas	3	hrs at	\$100.00	per hour	\$300.00
Grad	er time - bla	de road	1	hrs at	\$85.00	per hour	\$85.00
	Road Brushi	ng _	0.5	per day	\$600.00	per hour	\$300.00
	Laborer		4	hrs at	\$38.00	per hour	\$152.00

Total Project 2A: \$1,827.00

#### **Project 2B: Road Improvement**

Points:	D - G	Length:	105'	Туре	: 14' outsloped,	no ditch	
Excava	tor - cleanup, t	orushing	1	hrs at	\$175.00	per hour	\$175.00
	Cat time	_	1	hrs at	\$155.00	per hour	\$155.00
Dump Truck -	haul material	to waste areas	1	hrs at	\$100.00	per hour	\$100.00
	Road Brushing	]	0.25	per day	\$600.00	per hour	\$150.00
Grad	ler time - blade	road	1	hrs at	\$85.00	per hour	\$85.00
	Laborer		2	hrs at	\$38.00	per hour	\$76.00

Total Project 2B: \$741.00

#### Summary of Construction Costs Hakki Headwaters

#### **Project 2C: Road Improvement**

Points: Where marked in field

Points:	C - H	Length:	690'	Туре	: 14' with ditch			
Excava	ator - cleanup, b	rushing	4	hrs at	\$175.00	per hour	\$700.00	
	Cat time	_	4	hrs at	\$155.00	per hour	\$620.00	
Dump Truck	- haul material to	o waste areas	4	hrs at	\$100.00	per hour	\$400.00	
	Road Brushing		1	per day	\$600.00	per hour	\$600.00	
Gra	der time - blade	road	1	hrs at	\$85.00	per hour	\$85.00	
	Laborer	_	6	hrs at	\$38.00	per hour	\$228.00	
18 " culv	vert (includes ins	stallation)	40	ft at	\$17.00	per ft	\$680.00	
1	8 " bands	_	1	bands at	\$19.00	per band	\$19.00	
Proiect 2D:	Waste Area	ı Improvement	t			Total P	roject 2C:	\$3,332.00

 Cat time
 4
 hrs at
 \$155.00
 per hour
 \$620.00

Total Project 2D: \$620.00

Project 2 Total \$6,520.00

Project Total \$17,093.00

#### TIMBER SALE SUMMARY

#### Hakki Headwaters

1. Type of Sale: Final Harvest, Recovery, Sealed Bid

**<u>2. Boundary Lines:</u>** Timber sale boundaries are marked on the ground with white "Timber Sale Boundary" posters, red flagging, and red paint at locations shown on the Exhibit "A".

**3. Revenue Distribution:** 100% BOF; 100% Douglas County

**4. Sale Acreage:** The total sale area is approximately 99 acres. Sale acreage was determined from LIDAR imagery using electronic digitizing with the ArcMap 10.4 GIS program. The cruise expansion acres include only the timbered acres and not existing interior roads or landings.

	Posted GIS	Interior	Non-Stocked	Net Cruise	Net Harvest
	Acres	Roads/Landings	Acres	Acres	Acres
Sale Area	101.15	2.43	2.42	96.30	98.72

#### 5. Volume by Species

Species	Total Volume (MBF)	Volume (MBF) per Acre
Douglas-fir	1283	13.0
Hemlock	49	.5
Red Alder	439	4.4
Bigleaf Maple	50	.5
Total	1821	18.4

#### 6. Grade: (by Percent,)

Species	3 Peeler %	Special Mill %	2 Saw (12"+) %	3 Saw % (10" – 11") %	Big 3 Saw %	4 Saw % (8" – 9") %	6" – 7" % Hardwood
Douglas-fir			34 %	39 %		27 %	
Hemlock			16 %	46 %		38 %	
Red Alder			51 %	26 %		7 %	16 %
Bigleaf Maple			19 %	56 %			25 %

7. Cruise: The sale area was variable plot cruised using a nested Big BAF plot method. The Big BAF method is a combination of count plots and individually measured trees. Plots were spaced 150 feet apart on cruise lines spaced 400 feet apart. A 20 BAF full plot was used to determine tree counts for all species. Trees were sighted in at DBH. A total of 64 count plots were installed. A 160 BAF full plot at DBH was taken on every plot to determine which Douglas-fir trees would be fully measured. A total of 54 Douglas-fir trees were measured for DBH, height, grade, and defect. Minor species were measured on every third plot with a 20 BAF at DBH. A total of 37 red alder, 4 hemlock and 4 bigleaf maple trees were fully measured. Cruise data was compiled using Superace. Cruising was done by ODF Coos District staff J. Riding (primary cruiser, 60 plots) and C. Hall (4 plots) in October and November 2015, and January 2016.

**8. Grading:** All trees were graded according to the Official Bureau Log Scaling and Grading Rules. Trees were graded to maximize grade where possible and field net volume was calculated by converting all logs to 40 foot lengths. No field deductions were made for defect. Additional deductions were made for hidden defect and for breakage (Table B).

#### A. Summary data:

Diam	Ht. Stand	Form Pt.	Form Factor	CV %	SE %
DBH	5" DIB Conifer 6" DIB Hardwood	All species: DBH	Recorded for all cruised trees by estimate and measure	56.1 %	7.0 %

#### B. Defect and Breakage Summary:

#### BY PERCENT

SPECIES	CRUISED	HIDDEN DEFECT	BREAKAGE	TOTAL %
DOUGLAS FIR	0	5	2	7
HEMLOCK	0	5	2	7
RED ALDER	0	7	6	13
BIGLEAF MAPLE	0	7	6	13

#### C. Stand Data:

SPECIES	DBH	TREES/ACRE	BASAL AREA/AC	NET MBF/ACRE
DOUGLAS FIR	17"	60	94	13.0
HEMLOCK	14"	5	5	< 1
RED ALDER	18"	29	53	4.4
BIGLEAF MAPLE	16"	6	8	< 1

D. Green Tree Retention: There are six (6) Green Tree Reserve (GTR) areas associated with this sale that are reserved from cutting. These areas consist of several Type N perennial, several Type N seasonal potential debris flow streams, and several Type N seasonal other reaches. The majority of GTR is posted outside of the sale area and was not included in the timber cruise expansion acres. GTR on seasonal other reaches has been individually painted with yellow paint and its total volume of 39 MBF has been removed from the timber cruise. A total of 959 GTR are distributed across the sale area for an average of 9.7 GTR per acre. The FPA requirement for this sale is 202 leave trees. The table below summarizes the GTR areas.

Green Tree Retention (GTR) Area	Conifer Count	Conifer Vol. Removed	Hardwood Count	Hardwood Vol. Removed
Type N Perennial Stream Buffers & Seasonal	292	0	486	0
Potential Debris Flow Reaches				
Seasonal Other Reaches, Yellow Painted "W" trees	158	36	23	3
TOTALS	450	36	509	3

E. Down Wood: The down woody debris requirement of this sale is to leave 60 - 120 cubic feet per acre of hard logs across the sale area. This will be achieved by retaining hard logs containing a minimum of 20 cubic feet for any individual piece. Existing down wood can be used to achieve this target provided they meet the definition of a hard log (sound wood in decay class 1 or 2 indicated by intact bark and original wood color).

**9. Timber Description:** Timber across the sale area is predominately 47-48 year-old third growth Douglas-fir with significant amounts or red alder, and some minor amounts of western hemlock and bigleaf maple. Stocking is medium with some areas of sparse stocking dominated by brush.

10. Topography: North of the 2000 road, the timber sale area is primarily situated at the headwaters of Hakki Creek with a small portion situated in the Oar Creek drainage. Aspects are both SE and NW facing with slopes greater than 65 percent. South of the 2000 road the timber sale area is situated at the headwaters of a tributary of Dean Creek. Aspects here are likewise SE and NW with slopes greater than 65 percent. A number of seasonal drainages originate within the sale area. Hakki Creek is classified as a Type N stream within the sale area and becomes a Type F approximately 200 feet north of the sale boundary. Stream reaches that could deliver material to the Type F portion of Hakki Creek are classified as Potential Debris Flow streams and have posted buffers on them.

11. Logging Method: The sale area is designed to be uphill cable logged from new and existing landings or from short newly constructed/improved spurs. Any tailholds or guy anchors located on adjacent private land will require prior approval from landowner. The eastern portion of the sale area is located adjacent to Logging Restricted Areas which are off-limits for stringing cable lines or locating tailholds. In addition, there is a 100 meter wide Chainsaw Restricted Area adjacent to the eastern boundary of the timber sale area which could potentially impact cable logging operations at Point J. Chainsaw operations for guy anchor establishment is not allowed from April 1 to August 5 within the Chainsaw Restricted Area. Full suspension will be required while yarding over the posted stream buffers and other drainages shown on Exhibit A. Single end suspension will be maintained over the remainder of the sale areas. In unit lift/tail trees may be necessary to achieve the required deflection and has been costed for in the appraisal. Felling of unmerchantable material has also been costed for in the appraisal. Impacts to the 2000 road are anticipated during yarding and 100 yards of post haul repair and patch rock has been costed for in the appraisal. Purchaser is responsible for maintenance of the 2000 and 2800 roads from the waste areas identified on Exhibit A all the way north to the junction with the paved Dean Creek Road and has been costed for in the appraisal. The sale is designed for dry season operability. If Purchaser opts for winter and wet weather operations, Purchaser will bear cost of rocking landings, dirt spurs, and any necessary pre-haul spread on the 2800 road and 2000 roads.

<u>12. Access:</u> (All miles approximate). To access the timber sale area from State Highway 38 take the Dean Creek Road located approximately 6.5 east of Reedsport. Proceed on Dean Creek Road for 2.5 miles to the gravel 2000 road at the end of the pavement. Turn right onto the 2000 road and proceed for 1.6 miles to the timber sale area.

13. Projects: See attached "Project Cost Summary Sheet"

<u>Project No. 1</u>: Road and Landing Construction

Project No. 2: Road, Landing, and Waste Area Improvement

#### CRUISE VOLUME COMPUTATION REPORT

SALE NAME: Hakki Headwaters DATE: 02/27/2017 LEGAL LOCATION: Portions of Section 16, T22S R11W BY: J. Haynes

WM. Douglas County OR

#### FIELD CULL PERCENTAGE

Sale Area

Species	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple
Field cull	0%	0	0%	0%	0%	0

NET FIELD VOLUME MBF (Gross vol. less field cull)

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SPECIES>>>>	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple	TOTAL
Sale Area	1414	0	0	53	508	57	2032
less GTR vol	34	0	0	0	3	3 0	
TOTAL	1380	0	0	53	505	57	1995

HIDDEN DEFECT AND BREAKAGE

Species	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple
Hidden cull	0.05	0	0	0.05	0.07	0.07
Breakage	0.02	0	0	0.02	0.06	0.06
TOTAL	0.07	0.00	0.00	0.07	0.13	0.13

**NET VOLUME BY MBF BY AREA** 

SPECIES>>>>	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple	TOTALS
Sale Area	1283	0	0	49	439	50	1821
TOTALS	1283	0	0	49	439	50	1821

**NET VOLUME BY GRADE AND MBF** 

Grade >>>>>>>		2PEE	3PEE	S.M.	2SAW (12"+)	3SAW (10"-11")	Big 3 SAW	4SAW (8"-9")	(6"-7")
Sale Area Doug-Fir		0	0	0	438	501	0	344	0
	Hemlock	0	0	0	7	23	0	19	0
	Red Alder	0	0	0	222	114	0	31	72
	Cedar	0	0	0	0	0	0	0	0
	Maple	0	0	0	9	28	0	0	13

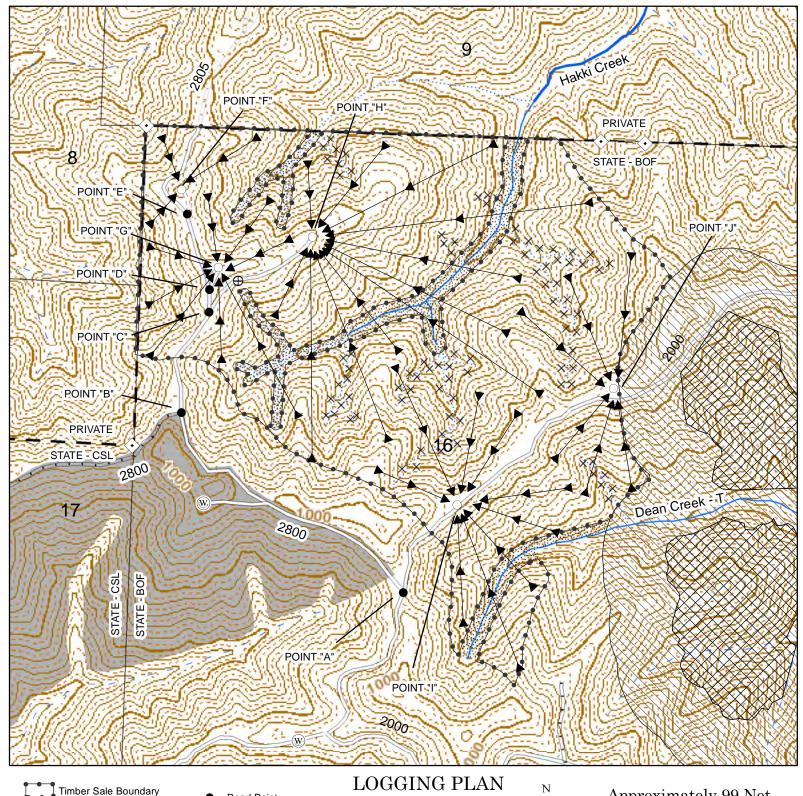
**GRADE DISTRIBUTION BY PERCENT** 

Grade >>>>>>>		2PEE	3PEE	S.M.	2SAW (12"+)	3SAW (10"-11")	Big 3 SAW	4SAW (8"-9")	(6"-7")
Sale Area Doug-fir		0%	0%	0%	34%	39%	0%	27%	0%
	Hemlock	0%	0%	0%	16%	46%	0%	38%	0%
	Red Alder	0%	0%	0%	51%	26%	0%	7%	16%
	Cedar	0%	0%	0%	0%	0%	0%	0%	0%
	Maple	0%	0%	0%	19%	56%	0%	0%	25%

# Operating Periods Restrictions Matrix for Hakki Headwaters 341-17-51

Operations	Operations Allowed	Non-project Roads in Logging Restricted Area.	Non-project Roads and Landings in Chainsaw Restricted Area.	Non-project Roads and Landings	Projects 1 & 2		Project Work January Febuary	Log Hauling on 2800 & 2805 Roads		Hauling January Febuary	Logging Activity in Logging Restricted Areas (includes guylines and tailholds).	Chain Saw use in Chainsaw Restricted Area.	Cable Yarding from 2805 road system or from unsurfaced landings on 2000 road.	Ground-based Yarding		Harvesting January Febuary
Operations Prohibited - T & E	Allowed						March			March		*****				March
							April			April						April
	ESSS				(a)	15th 16th	May		15th 16th	Мау					15th 16th	Мау
a <sub>l</sub>	st						June			June						June
Operations Prohibited for weather conditions: unless otherwise approved in writing by STATE	Activity Restricted 2 hours before sunset through 2 hours after sunrise						July			July						July
oited for weathe	12 hours before hours after sun					5th 6th	August			August					5th 6th	August
er conditions: ur	ise					15th 16th	September			September					15th 16th	September
iless otherwise						14th 15th	October		14th 15th	October					14th 15th	October
							November			November						November
							December			December						December

Operating Matrix represents the seasonal restrictions contained within the body of the timber sale contract. See Section 2455 for further information on seasonal restrictions.





Logging Restricted Area

Chainsaw Restricted Area

Existing Road STATE Maintained

= Existing Road Purchaser Maintained

Existing Roads - Private

= = = = New Construction

Landing

Road Point

Waste Area

Culvert

Survey Corner

Type F Stream

Perennial Type N Stream

Seasonal Type N Stream

Unclassified

Streambuffers / Green Tree Retention Areas

Individual Green Tree Retention

# Sale No. 341-17-51 Hakki Headwaters

Portions of Section 16 T22S, R11W, W.M. Douglas County, Oregon Regulated Use Area CS-1 100% BOF

20 foot contours



Approximately 99 Net **Harvest Acres** 



1:6,000 1 inch = 500 feet

The information shown on Exhibit "A" map(s) are approximate locations. Exact locations of features represented by map symbols will be determined on site and shall depend upon the conditions that exist on site. Activities shall be conducted based upon features determined on site rather than features shown on maps.