Cougar Looper Sorts
FY 2017
TIMBER CRUISE REPORT – Area 3

1. **Sale Area Location:** Area 3 is located in portions of Section 21, T4N, R8W, W.M., Clatsop County, Oregon.

2. **Fund Distribution: Fund:** BOF 100% CSL 0%
   Tax Code: 8-01 100%

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acres	Stream Buffer Acres	New R/W Acres	Existing R/W Acres	Net Acreage
3	MC	97	6	1	4	86
TOTALS		**97**	**6**	**1**	**4**	**86**

4. **Cruisers and Cruise Dates:** Area 3 was cruised by Jake Hatcher with Matt Dimick, Andrew Arvin, John Choate, and Bryce Rodgers. The cruise was performed in October, 2016.

5. **Cruise Method and Computation:** Area 3 is a modified clear cut unit. A variable plot cruise with a 40 BAF for conifer and a 33.61 BAF was used for hardwoods in all of these Areas.

   Area 3 is a modified clear cut unit. 55 plots were sampled on a grid of 3 chains by 5 chains, with a count/cruise plot ratio of 1 to 1. There were 28 measured plots and 27 count plots sampled

   Cruisers used Allegro data collectors, and were downloaded to the Atterbury Super A.C.E. program at the Astoria 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	PROJECT	TRACT	CRUISE TYPE
3	COUGARLOOP	A3	CC3
3	COUGARLOOP	A3	TAKE

6. **Timber Description:** **Area 3** is approximately 75 year-old timber stand of hemlock, alder, with some Sitka spruce and Douglas-fir. The average take hemlock tree size for harvest is approximately 16 inches DBH, with an average merchantable tree height of 48 feet. The average take Red alder tree size is approximately 14 inches DBH with an average merchantable tree height of 39 feet. The average spruce take tree size is approximately 21 inches DBH, with an average merchantable tree height of 47 feet. The average volume per acre to be harvested (net) is approximately 31 MBF. All trees were cruised to a merchantable top of 6 inch DIB or 40% fp.

   Cedar is a reserved species in Area 3.

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

Area	Target CV	Target SE%	Actual CV	Actual SE%
3	55	9	56.5	7.6

The statistics are for all areas and Take and Leave trees combined based on Net BF/Acre.

8. **Take Volumes by Species and Log Grades for All Sale Areas by MBF:** (See "Species, Sort Grade-Board Feet Volumes (Project)", "Statistics (Project)", and the "Stand Table Summary" attached). Volumes do not include "in-growth." The majority of defect and breakage was taken out during the cruise.

Species	DBH	Net Vol.	Special Mill	2 Saw	3Saw	4 Saw	% D & B	% Sale
Douglas-fir	47	155		155			-	6
W. Hemlock & True Fir	16	1,706		1,054	514	138	5	65
Sitka Spruce	21	271		163	71	37	2	10
Net Conifer Volume		2,132		1,372	585	175		81

Species	DBH	Net Vol.	12" +	10" - 11"	8" – 9"	6" – 7"	% D & B	% Sale
Alder & Other hardwoods	14	511	135	107	48	221	3	19

TOTAL NET VOLUME = 2,643 MBF

Sort Breakdown:

Sort #	Contract Number	Species and Sort Specifications	Estimated Net MBF	Sale %
1	341-17-76	WH/fir 6"-11"	614	23
2	341-17-77	WH/fir 12" to 20"	751	28
3	341-17-78	WH/fir 21"+	254	10
4	341-17-79	WH/fir High Quality (12"+)	87	3
7	341-17-80	DF 21"+	155	6
9	341-17-81	SS 6"-20"	98	4
10	341-17-82	SS 21"+	173	7
11	341-17-83	RA Camprun 6" to 9"	269	10
12	341-17-84	RA Camprun 10"+	242	9
13	341-17-85	2" Pulp	2,100 Tons	-

High Quality Volume was estimated at 5% of volume over 12 inches for Western Hemlock.
Pulp Volume based on approximately 7%-8% of sawlog volume.

9. **Prepared by:** Edward M. Holloran **Date:** 12/1/16

10. **Approved by:** _____ **Date:** 12/20/16

11. **Attachments:**
Cruise Plans & Maps – (3 pages)
Species, Sort, Grade Reports – Take (1 page)
Statistics Reports – (3 pages)
Stand Table Report – (2 pages)
Log Stock Table Report – Take (2 pages)

Revised August, 2002

CRUISE DESIGN
ASTORIA DISTRICT

Sale Name: Cougar Looper **Area(s)** 3

Harvest Type: Modified Clear Cut

Approx. Cruise Acres: 87 **Estimated CV%** 55 Net BF **SE% Objective** 9 Net BF

Planned (Unit) Sale Volume: 2871 MBF **Estimated Sale Area Value/Acre:** $10,725

A. **Cruise Goals:** (a) Grade minimum **180** conifer and **20** hardwood trees: (b) Sample 57 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;

B. **Cruise Design:**

1. **Plot Cruises:** BAF **40 for Conifer and 33.61 for Hardwoods** Full point
   Fixed Plot Size ____ Plot Radius ____ feet
   Cruise Line Direction(s) **0°/180°**
   Cruise Line Spacing **5** chains
   Cruise Plot Spacing **3** chains
   Grade/Count Ratio **1 : 1 (29 measure – 28 count)**
   Leave X leave trees per cruise plot.

   If plot falls clearly inside a buffer drop the plot. Take plots as marked on map. Grade all hardwoods as Camp Run. All Cedar is reserved Timber.

C. **Tree Measurements:**

1. **Diameter:** Minimum DBH to cruise is **8**" for conifers and **8**" for hardwoods. Record DBH to nearest ½" 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 is **7**" 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 16', 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'. 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
   D. Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.

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.

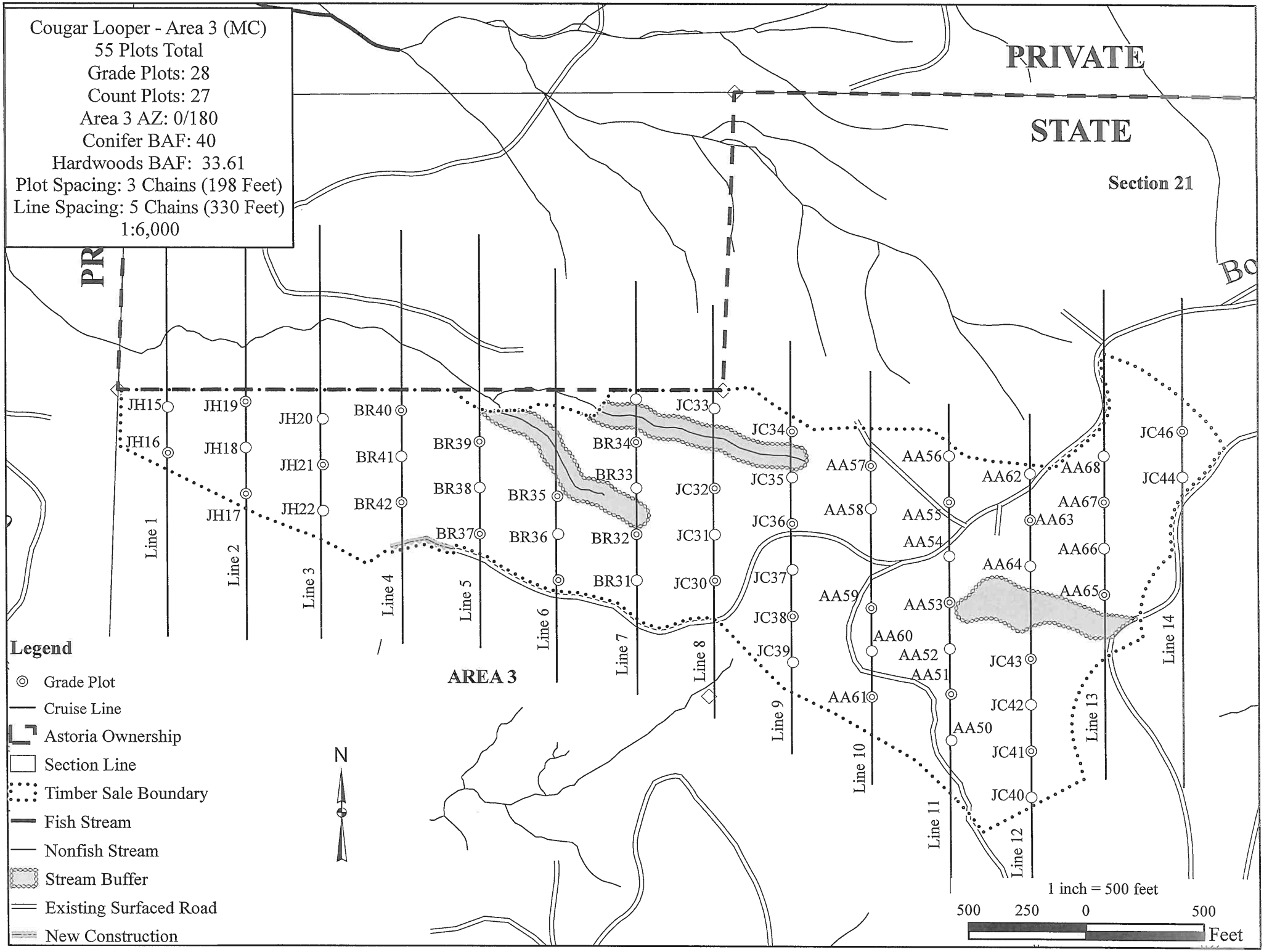
9. **Cruising Equipment:** Relaskop, Rangefinder, Logger's Tape (with dbh on back), Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design Cruise Map, Yellow Flagging, Blue Flagging

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.
    B. Data Recorder Instructions
    C. Other

Cruise Design by: Ed Holloran

Approved by: _____

Date: 12/20/2016


Cougar Looper - Area 3 (MC)
55 Plots Total
Grade Plots: 28
Count Plots: 27
Area 3 AZ: 0/180
Conifer BAF: 40
Hardwoods BAF: 33.61
Plot Spacing: 3 Chains (198 Feet)
Line Spacing: 5 Chains (330 Feet)
1:6,000
PRIVATE
STATE
Section 21
AREA 3
Line 1
Line 2
Line 3
Line 4
Line 5
Line 6
Line 7
Line 8
Line 9
Line 10
Line 11
Line 12
Line 13
Line 14
JH15
JH16
JH17
JH18
JH19
JH20
JH21
JH22
BR40
BR41
BR42
BR39
BR38
BR37
BR35
BR36
BR34
BR33
BR32
BR31
JC33
JC34
JC35
JC36
JC37
JC38
JC39
JC32
JC31
JC30
AA57
AA58
AA59
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AA61
AA56
AA55
AA54
AA53
AA52
AA51
AA50
AA62
AA63
AA64
AA65
AA68
AA67
AA66
JC46
JC44
JC43
JC42
JC41
JC40
Legend
Grade Plot
Cruise Line
Astoria Ownership
Section Line
Timber Sale Boundary
Fish Stream
Nonfish Stream
Stream Buffer
Existing Surfaced Road
New Construction
N
1 inch = 500 feet
500 250 0 500
Feet

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: COUGLOOP

Page 1
Date 12/20/2016
Time 1:16:26PM

T04N R08W S21 T0CC3

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
04N	08W	21	A3	0CC3	86.00	55	176	1	W

T04N R08W S21 T0CC3

Spp	ST	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
H		DO	CU		100.0	868											13	10		0.00	12.5
H		DO	2S	61	.7	12,339	12,253	1,054			52	48	1	3	12	85	38	15	366	2.22	33.5
H		DO	3S	30	.5	6,009	5,978	514		93	5	2	2	1	35	63	36	8	88	0.76	67.8
H		DO	4S	9	2.1	1,646	1,612	139		99	1		53	31	9	7	22	6	28	0.43	58.3
H	**Totals**			64	4.9	20,862	19,843	1,706		36	34	30	5	4	19	72	30	9	115	1.02	172.0
A		DO	CU		100.0	143											7	10		0.00	7.3
A		DO	1S	26		1,569	1,569	135			82	18	19	35	8	38	28	13	189	1.69	8.3
A		DO	2S	21		1,248	1,248	107		100			17	44		39	29	10	114	1.02	10.9
A		DO	3S	9		560	560	48		100			7	48	12	34	30	9	74	0.86	7.6
A		DO	4S	44	2.0	2,614	2,562	220		100			19	17	9	55	30	6	44	0.57	58.1
A	**Totals**			19	3.2	6,133	5,939	511		74	22	5	17	30	7	45	28	8	64	0.74	92.2
S		DO	CU		100.0	55											8	11		0.00	1.3
S		DO	2S	59		1,890	1,890	163				100				100	40	26	1292	6.51	1.5
S		DO	3S	27		830	830	71		59	8	33		25	7	68	35	12	216	1.69	3.8
S		DO	4S	14		430	430	37		33		67	27	22	51		22	8	84	0.94	5.2
S	**Totals**			10	1.7	3,205	3,150	271		20	2	78	4	10	9	78	27	12	267	2.26	11.8
D		DO	2S	100		1,801	1,801	155			10	90				100	40	25	1243	5.83	1.4
D	**Totals**			6		1,801	1,801	155			10	90				100	40	25	1243	5.83	1.4
CL		DO	CU		100.0	11											8	20		0.00	.1
CL		DO	2S	73		117	117	10				100	26	74			23	26	735	6.11	.2
CL		DO	3S	3		5	5	0		100				100			30	8	60	1.30	.1
CL		DO	4S	24		37	37	3		100			100				18	9	40	0.72	.9
CL	**Totals**			1	6.6	170	158	14		26		74	42	58			19	12	127	1.60	1.2
SL		DO	2S	83		114	114	10				100				100	40	43	3490	17.95	.0
SL		DO	4S	17		23	23	2				100				100	40	20	700	6.05	.0
SL	**Totals**			0		136	136	12				100				100	40	32	2095	12.00	.1
HL		DO	2S	100	7.0	154	143	12			6	94	6		28	66	30	20	660	5.08	.2
HL	**Totals**			0	7.0	154	143	12			6	94	6		28	66	30	20	660	5.08	.2
Type Totals					4.0	32,461	31,170	2,681		39	26	35	7	10	14	69	29	9	112	1.02	278.9

TC TSTATS

STATISTICS

PAGE 1

PROJECT COUGLOOP

DATE 12/16/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	**08W**	**21**	**A3**	**TAKE**	86.00	55	361	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	55	361	6.6		
CRUISE	28	169	6.0	16,198	1.0
DBH COUNT					
REFOREST					
COUNT	27	192	7.1		
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	94	111.0	15.7	48	37.5	148.4	19,994	19,843	5,219	5,219
R ALDER	67	69.8	14.2	39	20.4	76.8	5,990	5,939	1,907	1,907
S SPRUCE	7	7.1	21.2	47	3.8	17.5	3,150	3,150	716	716
DOUG FIR	1	.5	47.0	123	0.8	5.8	1,801	1,801	338	338
TOTAL	*169*	*188.4*	*15.5*	*45*	*63.0*	*248.4*	*30,936*	*30,733*	*8,180*	*8,180*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK	117.8	12.1	379	432	484			
R ALDER	129.4	15.8	101	120	139			
S SPRUCE	116.3	47.3	1,008	1,913	2,818			
DOUG FIR								
TOTAL	*185.8*	*14.3*	*333*	*389*	*445*	*1,378*	*345*	*153*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK	110.7	14.9	94	111	128			
R ALDER	106.6	14.4	60	70	80			
S SPRUCE	218.2	29.4	5	7	9			
DOUG FIR	406.0	54.7	0	0	1			
TOTAL	*58.0*	*7.8*	*174*	*188*	*203*	*134*	*34*	*15*

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	86.3	11.6	131	148	166			
R ALDER	105.6	14.2	66	77	88			
S SPRUCE	201.0	27.1	13	17	22			
DOUG FIR	406.0	54.7	3	6	9			
TOTAL	*44.1*	*5.9*	*234*	*248*	*263*	*78*	*19*	*9*

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	83.4	11.2	17,613	19,843	22,072			
R ALDER	111.2	15.0	5,049	5,939	6,828			
S SPRUCE	201.7	27.2	2,294	3,150	4,006			
DOUG FIR	406.0	54.7	816	1,801	2,787			
TOTAL	*57.9*	*7.8*	*28,335*	*30,733*	*33,131*	*134*	*33*	*15*

TC TSTNDSUM

Stand Table Summary

Project COUGLOOP

T04N R08W S21 TTAKE — **T04N R08W S21 TTAK**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	08W	21	A3	TAKE	86.00	55	169

Page: 1
Date: 12/16/20
Time: 10:18:05AM

Spc	ST	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
H		8	3	86	20	13.565	4.74	9.04	5.0	20.0		45	181		39	16
H		9	4	86	45	14.291	6.31	14.29	8.2	27.5		118	393		101	34
H		10	5	86	36	14.469	7.89	14.47	8.8	28.0		127	405		110	35
H		11	1	89	70	2.392	1.58	2.39	17.0	60.0		41	143		35	12
H		12	3	87	50	6.029	4.74	6.03	17.7	56.7		107	342		92	29
H		13	4	86	55	6.849	6.31	8.56	17.0	46.0		146	394		125	34
H		14	8	87	85	11.812	12.63	20.67	21.7	79.3		449	1,639		386	141
H		15	5	89	97	6.431	7.89	12.86	26.0	98.0		334	1,260		288	108
H		16	2	85	76	2.261	3.16	4.52	22.0	77.5		99	350		86	30
H		17	5	88	97	5.007	7.89	10.01	33.9	121.0		339	1,212		292	104
H		18	8	87	86	7.145	12.63	12.50	39.0	130.7		488	1,634		419	141
H		19	2	87	76	1.603	3.16	3.21	34.0	115.0		109	369		94	32
H		20	5	88	97	3.617	7.89	7.96	42.6	154.5		339	1,230		292	106
H		21	2	89	90	1.312	3.16	2.62	49.0	175.0		129	459		111	40
H		22	3	84	89	1.794	4.74	3.59	46.8	165.0		168	592		144	51
H		23	4	86	87	2.188	6.31	4.38	56.8	203.8		248	892		214	77
H		24	5	87	95	2.512	7.89	5.02	63.9	230.0		321	1,156		276	99
H		25	2	86	100	.926	3.16	2.32	57.0	250.0		132	579		113	50
H		26	3	88	99	1.284	4.74	2.57	81.0	320.0		208	822		179	71
H		27	3	85	100	1.191	4.74	2.78	74.3	300.0		206	834		178	72
H		28	1	85	111	.369	1.58	1.11	66.7	290.0		74	321		63	28
H		29	1	89	99	.344	1.58	.69	100.5	425.0		69	292		59	25
H		30	2	84	102	.643	3.16	1.29	104.5	402.5		134	518		116	45
H		31	1	85	92	.301	1.58	.90	62.3	313.3		56	283		48	24
H		32	2	83	107	.565	3.16	.85	94.3	453.3		80	384		69	33
H		33	1	92	129	.266	1.58	.80	110.7	593.3		88	473		76	41
H		34	2	84	115	.501	3.16	1.00	101.5	430.0		102	431		87	37
H		35	1	78	136	.236	1.58	.71	69.0	366.7		49	260		42	22
H		36	1	86	101	.223	1.58	.45	153.0	675.0		68	301		59	26
H		39	2	85	123	.381	3.16	.95	167.8	830.0		160	790		137	68
H		41	1	89	115	.172	1.58	.52	153.7	813.3		79	420		68	36
H		43	1	83	104	.157	1.58	.16	323.0	1520.0		51	238		43	20
H		44	1	86	78	.149	1.58	.30	183.0	825.0		55	247		47	21
H		Totals	94	87	64	110.984	148.36	159.50	32.7	124.4		5,219	19,843		4,488	1,706
A		9	2	86	62	5.161	2.28	5.16	11.0	30.0		57	155		49	13
A		10	3	86	44	6.271	3.42	6.27	10.7	36.7		67	230		58	20
A		11	6	87	64	10.365	6.84	10.37	16.2	55.0		168	570		144	49
A		12	4	87	45	5.806	4.56	5.81	17.0	50.0		99	290		85	25
A		13	5	86	53	6.184	5.70	7.42	18.2	55.0		135	408		116	35
A		14	8	85	61	8.532	9.12	11.73	21.3	64.5		250	757		215	65
A		15	7	86	39	6.503	7.98	7.43	18.2	61.2		136	455		117	39
A		16	11	86	55	8.982	12.54	11.43	27.1	71.4		310	817		267	70
A		17	4	87	69	2.893	4.56	4.34	29.8	101.7		129	441		111	38
A		18	5	86	64	3.433	6.07	5.58	29.5	93.1		164	519		141	45
A		19	2	86	74	1.158	2.28	2.32	34.0	107.5		79	249		68	21
A		20	4	86	57	2.090	4.56	3.14	38.2	106.7		120	334		103	29
A		21	4	86	54	1.896	4.56	2.84	39.3	133.3		112	379		96	33
A		25	1	86	60	.334	1.14	.67	50.0	190.0		33	127		29	11
A		35	1	87	101	.171	1.14	.34	143.5	605.0		49	206		42	18
A		Totals	67	86	56	69.781	76.75	84.84	22.5	70.0		1,907	5,939		1,640	511
S		12	1	83	33	3.175	2.49	3.17	13.0	30.0		41	95		35	8

TC TSTNDSUM

Stand Table Summary

Project COUGLOOP

T04N R08W S21 TTAKE

T04N R08W S21 TTAK

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	08W	21	A3	TAKE	86.00	55	169

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Spc	ST	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
S		17	1	83	60	1.582	2.49	3.16	23.0	80.0		73	253		63	22
S		20	1	85	60	1.143	2.49	1.14	60.0	180.0		69	206		59	18
S		27	1	83	101	.627	2.49	1.25	87.0	325.0		109	408		94	35
S		42	1	85	146	.259	2.49	.78	196.0	1016.7		152	790		131	68
S		48	1	86	131	.198	2.49	.60	224.0	1213.3		133	722		115	62
S		62	1	77	141	.119	2.49	.36	388.7	1893.3		139	676		119	58
S		Totals	7	83	58	7.103	17.45	10.47	68.4	301.0		716	3,150		616	271
D		47	1	88	157	.483	5.82	1.45	233.3	1243.3		338	1,801		291	155
D		Totals	1	88	157	.483	5.82	1.45	233.3	1243.3		338	1,801		291	155
Totals			169	86	61	188.352	248.39	256.26	31.9	119.9		8180	30,733		7,035	2,643

TC TLOGSTVB

Log Stock Table - MBF

Project: COUGLOOP

T04N R08W S21 TTAKE

T04N R08W S21 TTAK

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	08W	21	A3	TAKE	86.00	55	169

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Spp	S 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	16-20	21-25	26-29	30-39	40+
H		DO	CU	5																
H		DO	CU	6																
H		DO	CU	8																
H		DO	CU	10																
H		DO	CU	12																
H		DO	CU	16																
H		DO	CU	18																
H		DO	CU	21																
H		DO	CU	22																
H		DO	CU	37																
H		DO	CU	83																
H		DO	2S	16	6		6	.4								6				
H		DO	2S	24	13		13	.7								13				
H		DO	2S	30	16		16	1.0									16			
H		DO	2S	32	126		126	7.4						67	27	14			18	
H		DO	2S	40	900	.8	892	52.3						194	146	320	141	67	24	
H		DO	3S	16	5		5	.3					5							
H		DO	3S	18	1		1	.1					1							
H		DO	3S	20	2		2	.1						2						
H		DO	3S	26	3		3	.2						3						
H		DO	3S	32	173		173	10.1			89	9	65				10			
H		DO	3S	34	6		6	.4			6									
H		DO	3S	36	12		12	.7			10	3								
H		DO	3S	40	314	.9	312	18.3			85	70	135	9	6	7				
H		DO	4S	16	38		38	2.2			36	3								
H		DO	4S	18	2		2	.1							2					
H		DO	4S	20	33		33	1.9			33									
H		DO	4S	23	2		2	.1			2									
H		DO	4S	24	12		12	.7			12									
H		DO	4S	26	13		13	.7			11	2								
H		DO	4S	30	17		17	1.0			17									
H		DO	4S	32	15	19.7	12	.7			12									
H		DO	4S	36	10		10	.6			10									
H		Totals			1,719		1,706	64.6			322	86	206	275 278	181	360	167	67	43 42	
A		DO	CU																	
A		DO	CU	2																
A		DO	CU	6																
A		DO	CU	8																
A		DO	CU	9																
A		DO	CU	10																
A		DO	CU	12																
A		DO	1S	10	5		5	.9						5						
A		DO	1S	16	6		6	1.3						6						
A		DO	1S	20	15		15	2.9						7	7					
A		DO	1S	30	47		47	9.2						8	29	10				
A		DO	1S	32	11		11	2.1						11						
A		DO	1S	40	51		51	10.0						36			15			
A		DO	2S	16	6		6	1.2					6							
A		DO	2S	20	12		12	2.4					12							
A		DO	2S	30	47		47	9.2					47							

TC TLOGSTVB

Log Stock Table - MBF

Project: COUGLOOP

T04N R08W S21 TTAKE

T04N R08W S21 TTAK

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	08W	21	A3	TAKE	86.00	55	169

Page 2
Date 12/16/2016
Time 10:18:03AM

Spp	S T	So	Gr 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	16-20	21-25	26-29	30-39	40+
A		DO	2S	40	42		42	8.2					42							
A		DO	3S	20	3		3	.6				3								
A		DO	3S	26	6		6	1.2				6								
A		DO	3S	30	17		17	3.2				17								
A		DO	3S	32	6		6	1.1				6								
A		DO	3S	40	16		16	3.2				16								
A		DO	4S	16	19		19	3.7			19									
A		DO	4S	18	1		1	.2			1									
A		DO	4S	20	21		21	4.1			21									
A		DO	4S	22	1		1	.3			1									
A		DO	4S	24	2		2	.4			2									
A		DO	4S	26	9		9	1.7			9									
A		DO	4S	30	29	15.3	25	4.8			25									
A		DO	4S	32	18		18	3.5			18									
A		DO	4S	34	3		3	.5			3									
A		DO	4S	36	2		2	.5			2									
A		DO	4S	40	120		120	23.4			120									
A		Totals			515		511	19.3			220	48	107	74	36	10	15			
S		DO	CU	4																
S		DO	CU	9																
S		DO	2S	40	163		163	60.0								29	23		77	34
S		DO	3S	30	18		18	6.5					18							
S		DO	3S	32	5		5	1.8								5				
S		DO	3S	36	6		6	2.1							6					
S		DO	3S	40	43		43	15.9				6	18						19	
S		DO	4S	16	4		4	1.5			4									
S		DO	4S	20	6		6	2.2								6				
S		DO	4S	24	8		8	3.0			8									
S		DO	4S	32	19		19	6.9										19		
S		Totals			271		271	10.2			12	6	35		6	39	23	19	96	34
D		DO	2S	40	155		155	100.0							15			57	83	
D		Totals			155		155	5.9							15			57	83	
Total All Species					2,660		2,643	100.0			555	141	348	349	238	409	204	142	221	34

TC TSTATS

STATISTICS

PROJECT COUGLOOP

DATE 12/16/2016

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	08W	21	A3	0CC3	86.00	55	370	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	55	370	6.7		
CRUISE	28	176	6.3	16,360	1.1
DBH COUNT					
REFOREST					
COUNT	27	194	7.2		
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	94	111.0	15.7	48	37.5	148.4	19,994	19,843	5,219	5,219
R ALDER	67	69.8	14.2	39	20.4	76.8	5,990	5,939	1,907	1,907
S SPRUCE	7	7.1	21.2	47	3.8	17.5	3,150	3,150	716	716
DOUG FIR	1	.5	47.0	123	0.8	5.8	1,801	1,801	338	338
SNAG	3	.8	29.3	49	0.7	3.6				
CEDLEAV	2	1.0	16.3	80	0.4	1.5	158	158	37	37
HEMLEAV	1	.1	43.0	93	0.1	.7	154	143	33	33
SPRUCELV	1	.0	64.0	81	0.1	.7	136	136	31	31
TOTAL	*176*	*190.2*	*15.7*	*45*	*64.4*	*254.9*	*31,384*	*31,170*	*8,281*	*8,281*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

SAMPLE TREES - BF

CL: 68.1 % / SD: 1.0	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
WHEMLOCK	117.8	12.1	379	432	484			
R ALDER	129.4	15.8	101	120	139			
S SPRUCE	116.3	47.3	1,008	1,913	2,818			
DOUG FIR								
SNAG								
CEDLEAV	134.2	125.7		785	1,772			
HEMLEAV								
SPRUCELV								
TOTAL	*186.8*	*14.1*	*359*	*418*	*476*	*1,394*	*348*	*155*

TREES/ACRE

CL: 68.1 % / SD: 1.0	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WHEMLOCK	110.7	14.9	94	111	128			
R ALDER	106.6	14.4	60	70	80			
S SPRUCE	218.2	29.4	5	7	9			
DOUG FIR	406.0	54.7	0	0	1			
SNAG	446.5	60.2	0	1	1			
CEDLEAV	684.5	92.2	0	1	2			
HEMLEAV	741.6	99.9	0	0	0			
SPRUCELV	741.6	99.9	0	0	0			
TOTAL	*57.0*	*7.7*	*176*	*190*	*205*	*130*	*32*	*14*

BASAL AREA/ACRE

CL: 68.1 % / SD: 1.0	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WHEMLOCK	86.3	11.6	131	148	166			
R ALDER	105.6	14.2	66	77	88			
S SPRUCE	201.0	27.1	13	17	22			
DOUG FIR	406.0	54.7	3	6	9			
SNAG	437.6	59.0	1	4	6			
CEDLEAV	519.5	70.0	0	1	2			
HEMLEAV	741.6	99.9	0	1	1			

STATISTICS

PROJECT COUGLOOP

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	08W	21	A3	0CC3	86.00	55	370	1	W

BASAL AREA/ACRE

CL: 68.1% / SD: 1.0	COEFF VAR.	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
SPRUCELV	741.6	99.9	0	1	1			
TOTAL	*43.2*	*5.8*	*240*	*255*	*270*	*74*	*19*	*8*

NET BF/ACRE

CL: 68.1 % / SD: 1.0	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WHEMLOCK	83.4	11.2	17,613	19,843	22,072			
R ALDER	111.2	15.0	5,049	5,939	6,828			
S SPRUCE	201.7	27.2	2,294	3,150	4,006			
DOUG FIR	406.0	54.7	816	1,801	2,787			
SNAG								
CEDLEAV	591.0	79.6	32	158	285			
HEMLEAV	741.6	99.9	0	143	285			
SPRUCELV	741.6	99.9	0	136	273			
TOTAL	*56.5*	*7.6*	*28,798*	*31,170*	*33,543*	*127*	*32*	*14*