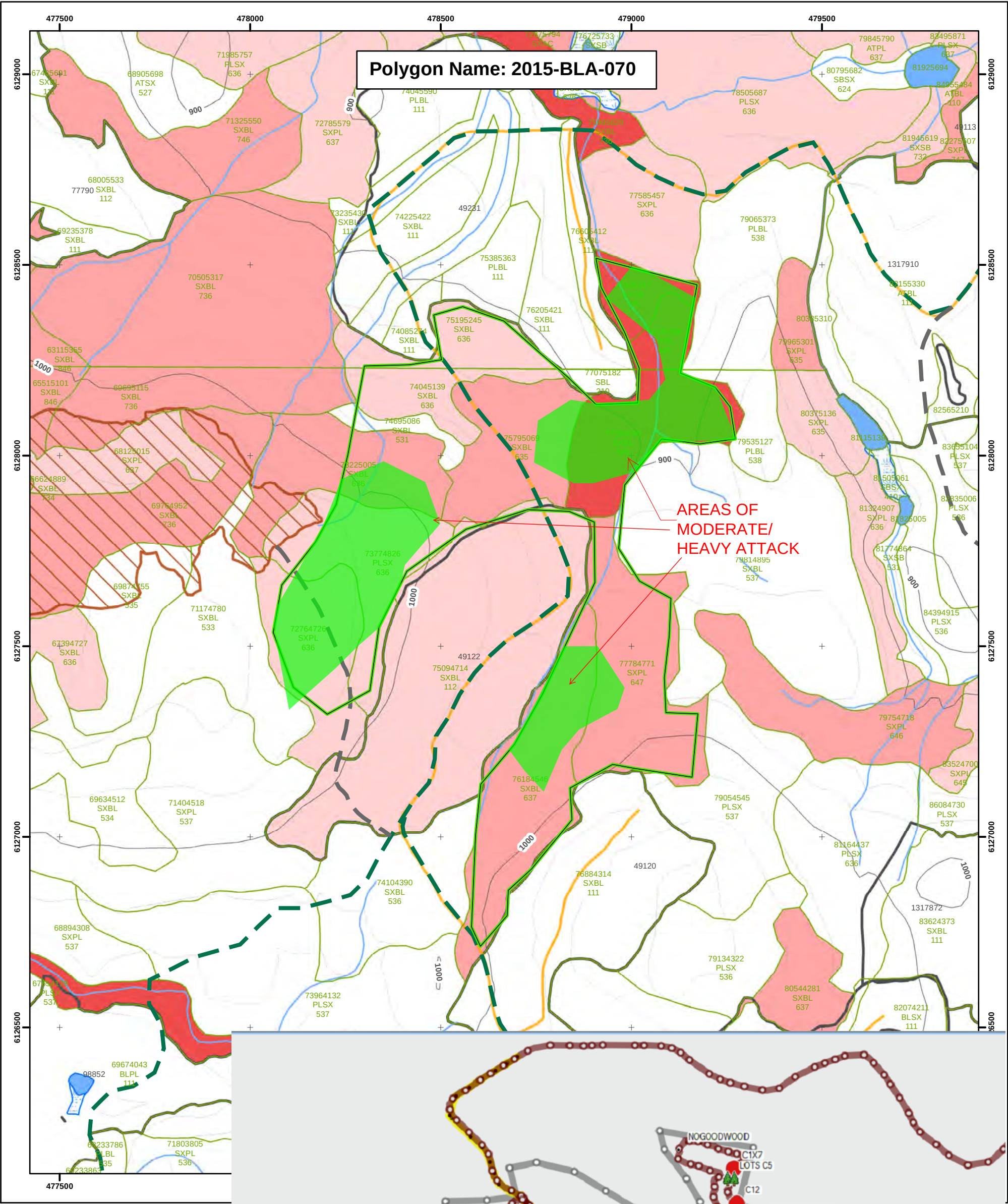




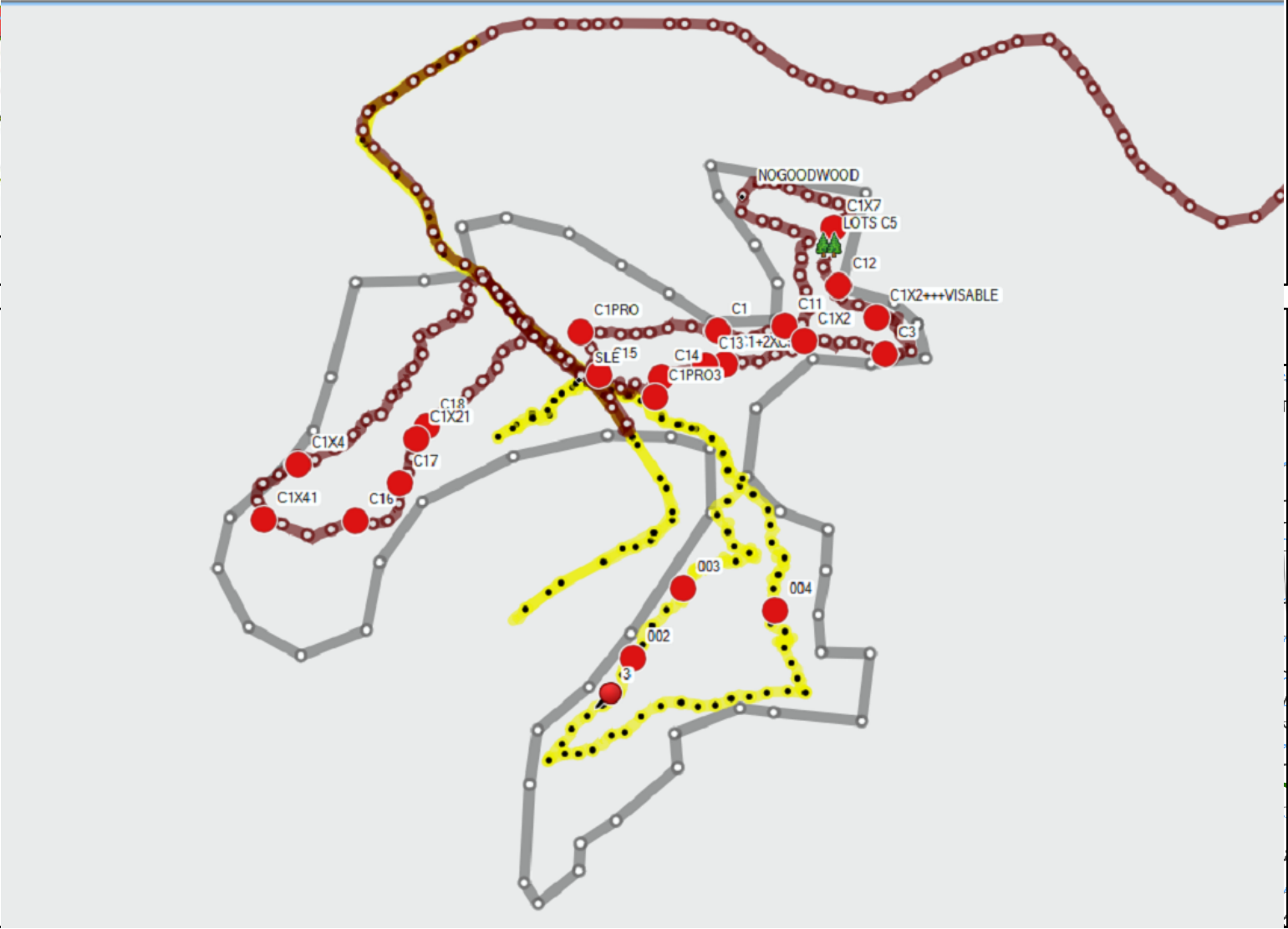


Ministry of
Forests, Lands and
Natural Resource Operations

Spruce Bark Beetle Field Map

Polygon Name: 2015-BLA-070

Landscape	Blackwater
Unit/BMU:	
Region:	Omineca
District:	Mackenzie
Mapsheet:	093O06
Hectares:	79.36
Scale:	1:10,000
When plotted on 11x17	
Coordinate System:	NAD 1983 UTM Zone 10N
Datum:	North American 1983
Date Drawn:	03/12/2015
Drawn By:	msnively



**SENECA ENTERPRISES LTD.**

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**SPRUCE BARK BEETLE REPORT
FH16DMK016,017**POLYGON: **2015-BLA-070**

HECTARES:

79.36

WALKTHROUGH DISTANCE:

4700ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4)**15 31.9%****SUMMARY OF CURRENT INFESTATION**

Walkthrough shows 32% infested pixels and the polygon has fairly heavy attack throughout. The east and west portions of the polygon has a higher risk of spread and attack throughout has one and two year life cycles. There were also a few code 3's noted as well.

MODERATE TO HEAVY ATTACK**ACCESS**

Truck parked at 7km on Tsedeka FSR. Sled 6km on block road to polygon

POLYGON FEATURES (Topography, Terrain, Timber Types, Age)

Majority of polygon 70% spruce, 30% balsam stand. Slope rises in the south. Areas of dead pine throughout.

SIZE, BOUNDARY and PATTERN OF INFESTATION

Areas of heavy attack. Sanitation rating of Moderate from 3 probe lines, Code 1 attacked trees are on a 1 and 2 year cycle. Are areas not represented with heavier attack than probe lines show.

INCIDENCE AND SEVERITY OF ATTACK

32% of polygon infested pixels. Pretty consistent throughout with the northern portion of polygon having heavier attack. Are code 3's and 1 year cycle attacked trees scattered.

RISK OF BEETLE SPREAD

Polygon surrounded by cutblocks however will spread east and west. High risk of spread.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Good access along unplowed road and polygon surrounded by cutblocks to the north and south. Mostly pine to the east, some slopes towards the south.

RECOMMENDATIONS**OPTION 1****TRAP TREES**

With a moderate sanitation rating, and having 30% of pixels infested with attack to fly in both 2016 and 2017, need to establish a strategy of trap tree trails in several places to hold the beetle. Map shows may be activity to the west but unsure. Road was unplowed but will need to lay out polygon for harvest at some point due to infestation. Lay trap tree trails while awaiting logging plans

OPTION 2**CRUISE HARVEST**

While surrounded by cutblocks, should be fairly easy to harvest around them to capture beetle.

Summary						
2015-BLA-070	HEC	79.36	METERS WALKED	4700	% TRAVERSED	5.9%
PIXELS COVERED BY WALKTHROUGH	47	INFESTED PIXELS	15	ESTIMATED % OF BLOCK INFESTED (From Walk through)		31.9%

TABLE 5- Spruce Beetle Infestation Summary Sheet

OF NOTE- Results taken from a 100m Probe Line established at 1 per 50 hectares to represent

DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES
			2015		2014		2013		
			1	2	3	4	5	6	
17.5-25.0	3.3	102.3	0.0	0.0	0.0	0.0	0.0	0.0	26.4
25.1-30.0	5.3	143.1	0.0	0.0	0.0	0.0	0.0	0.0	53
30.1-35.0	7.1	149.1	7.1	0.0	0.0	0.0	7.1	0.0	63.9
35.1-40.0	9.4	84.6	0.0	0.0	0.0	0.0	9.4	0.0	47
40.1-45.0	11.6	34.8	0.0	0.0	0.0	0.0	0.0	0.0	11.6
45.1-50.0	13.8	0	0.0	0.0	13.8	0.0	0.0	0.0	13.8
50.1-55.0	16.2	16.2	16.2	0.0	0.0	0.0	0.0	0.0	0
55.1-60.0	18.7	37.4	0.0	0.0	0.0	0.0	0.0	0.0	0
60.1 +	25.3	0	25.3	0.0	0.0	0.0	0.0	0.0	0
TOTALS	646.4	567.5	48.6	0	13.8	0.0	16.5	0	215.7

TABLE 4- Spruce Beetle Attack Density and Larval Density Rating

MEAN NO. OF ENTRANCE HOLES PER 225 cm2 PHLOEM SAMPLE	< 1 LOW Attack Density	MEAN NO. OF LIVING LARVAE PER 225 cm2 PHLOEM SAMPLE	< 4.9 LOW Mean Larval Density
	1.0- 1.9 MOD Attack Density		5.0 - 14.9 MOD Mean Larval Density
	2.0 - 3.9 HIGH Attack Density		15-24.9 HIGH Mean Larval Density
3.75	< 3.9 SEVERE Attack Density	5.50	>24.9 EXTREME Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough

% 2015 ATTACK	7.5%	7.5	SANITATION AND SALVAGE HARVEST PRIORITY RATING			
% 2014 ATTACK	2.1%	##	LIGHT	0-599	LEAVE (Monitor, Trap Trees, Baits, etc)	718.3
% 2013 ATTACK	2.6%	##	MODERATE	600-999	PROBE (To Obtain Further Info)	
% HOST IN STAND	75.0%	##	HEAVY	1000+	RECOMMEND CRUISING/ LOGGING	

FROM 3 PROBE LINES

SUMMARY OF ALL CARDS FS1111						NUMBER OF CARDS		3		
ACCESS -		Truck parked at 7km on Tsedeka FSR. Sled 6km on block road to polygon								
POLYGON FEATURES -		Majority of polygon 70% spruce, 30% balsam stand. Slope rises in the south. Areas of dead pine throughout.								
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
			2015		2014		2013			
			1	2	3	4	5	6	BL	AT
17.5-25.0	3.3	31	0	0	0	0	0	0	8	0
25.1-30.0	5.3	27	0	0	0	0	0	0	10	0
30.1-35.0	7.1	21	1	0	0	0	1	0	9	0
35.1-40.0	9.4	9	0	0	0	0	1	0	5	0
40.1-45.0	11.6	3	0	0	0	0	0	0	1	0
45.1-50.0	13.8	0	0	0	1	0	0	0	1	0
50.1-55.0	16.2	1	1	0	0	0	0	0	0	0
55.1-60.0	18.7	2	0	0	0	0	0	0	0	0
60.1 +	25.3	0	1	0	0	0	0	0	0	0
TOTALS		94	3	0	1	0	2	0	34	0
BARK SAMPLES 15 cm x 15 cm		NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE ADULTS	NO. CALLOW	FRESH (GREEN) BLOWDOWN			
							Attacked		Unattacked	
							Yr	Yr		
4		15	0	22	0	25	0		0	
SIZE, BOUNDARY AND PATTERN OF THE INFESTATION										
Areas of heavy attack. Sanitation rating of Moderate from 3 probe lines, Code 1 attacked trees are on a 1 and 2 year cycle. Are areas not represented with heavier attack than probe lines show.										
INCIDENCE AND SEVERITY OF THE INFESTATION										
32% of polygon infested pixels. Pretty consistent throughout with the northern portion of polygon having heavier attack. Are code 3's and 1 year cycle attacked trees scattered.										
RISK OF BEETLE SPREAD										
Polygon surrounded by cutblocks however will spread east and west . High risk of spread.										
ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES										
Good access along unplowed road and polygon surrounded by cutblocks to the north and south. Mostly pine to the east, some slopes towards the south.										


BEETLE PROBE CARD

LOCATION BLA-070		ELEVATION 903m		LATITUDE 0478942		PAGE OF					
BEARING 246°	STRIP LINE NO.	STRIP WIDTH 10m	DISTANCE 100m	BEETLE SPECIES ☒ SB ☐ MPB ☐ DFB							
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES		
			1	2	3	4	5	6	MAIN	OTHER	
12.5 - 17.4	2.0									balum	
17.5 - 25.0	3.3	•••								•••	
25.1 - 30.0	5.3	•••								•••	
30.1 - 35.0	7.1	•••								•••	
35.1 - 40.0	9.4	•••								•••	
40.1 - 45.0	11.6	•••								•••	
45.1 - 50.0	13.8									•••	
50.1 - 55.0	16.2										
55.1 - 60.0	18.7										
60.1 -	25.3										
TOTALS		15		1		2		13			
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN					
						Attacked	Unattacked				
	2		3								
	1		5								
COMMENTS											
CREW NAMES Blake B						DATE 16 2 21					


BEETLE PROBE CARD

LOCATION 478983 + 6128110		ELEVATION		LATITUDE		PAGE OF					
BEARING 90	STRIP LINE NO.	STRIP WIDTH 10	DISTANCE 100	BEETLE SPECIES ☒ SB ☐ MPB ☐ DFB							
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES		
			1	2	3	4	5	6	MAIN	OTHER	
12.5 - 17.4	2.0									BL	
17.5 - 25.0	3.3	•••									
25.1 - 30.0	5.3	•••									
30.1 - 35.0	7.1	•••									
35.1 - 40.0	9.4	•••									
40.1 - 45.0	11.6	•••									
45.1 - 50.0	13.8										
50.1 - 55.0	16.2	•••									
55.1 - 60.0	18.7										
60.1 -	25.3										
TOTALS											
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN					
						Attacked	Unattacked				
N	6		6		11						
S	6		8		14						
COMMENTS Probe BLA 70											
CREW NAMES PATRICK REULETER						DATE 16 2 21					



BRITISH
COLUMBIA



BEETLE PROBE CARD

LOCATION 478810 - 6127949		ELEVATION		LATITUDE		PAGE OF					
BEARING 290	STRIP LINE NO BIA 70	STRIP WIDTH 10	DISTANCE 100	BEETLE SPECIES ☒ SB ☐ MPB ☐ DFB							
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES		
			1	2	3	4	5	6	MAIN	OTHER	
12.5 - 17.4	2.0										
17.5 - 25.0	3.3	☒								1:	
25.1 - 30.0	5.3	☒								17	
30.1 - 35.0	7.1	☒								1:	
35.1 - 40.0	9.4									1:	
40.1 - 45.0	11.6										
45.1 - 50.0	13.8										
50.1 - 55.0	16.2										
55.1 - 60.0	18.7										
60.1 -	25.3										
TOTALS											
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN					
						Attacked	Unattacked				
N	6		36								
S	4		21								
COMMENTS PROBE #3 BIA 70											
CREW NAMES PATRICK PELLETIER						DATE Y M D 10 2 21					

STRIP NO.: B470 DIRECTION: _____
START STRIP: _____
JOB NO.: _____ DATE: FEB 21
CREW: PATRICK POWELL
REMARKS: _____

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TOPOGRAPHY STRIP No. BLA-070 700 TIMBER TYPE

50% balsam
50% spruce

600

500

400

300

200

100

Creek

Bearing 174°

200m S/L 200m

STRIP NO.: BLA-070 DIRECTION: 126°

START STRIP: 0-700

JOB NO.: DATE: Feb 21/16

CREW: Blake B / Pat P

REMARKS:

 www.irlsupplies.com
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TOPOGRAPHY STRIP No. BLA-070 1400 TIMBER TYPE

1300

1200

1100

1000

900

800

Bearing 62°

open walking

attack more
Spread out

200m S/L 200m

STRIP NO.: BLA-070 DIRECTION: 174°

START STRIP: 800-1400m

JOB NO.: DATE: Feb 21/16

CREW: Blake B

REMARKS:

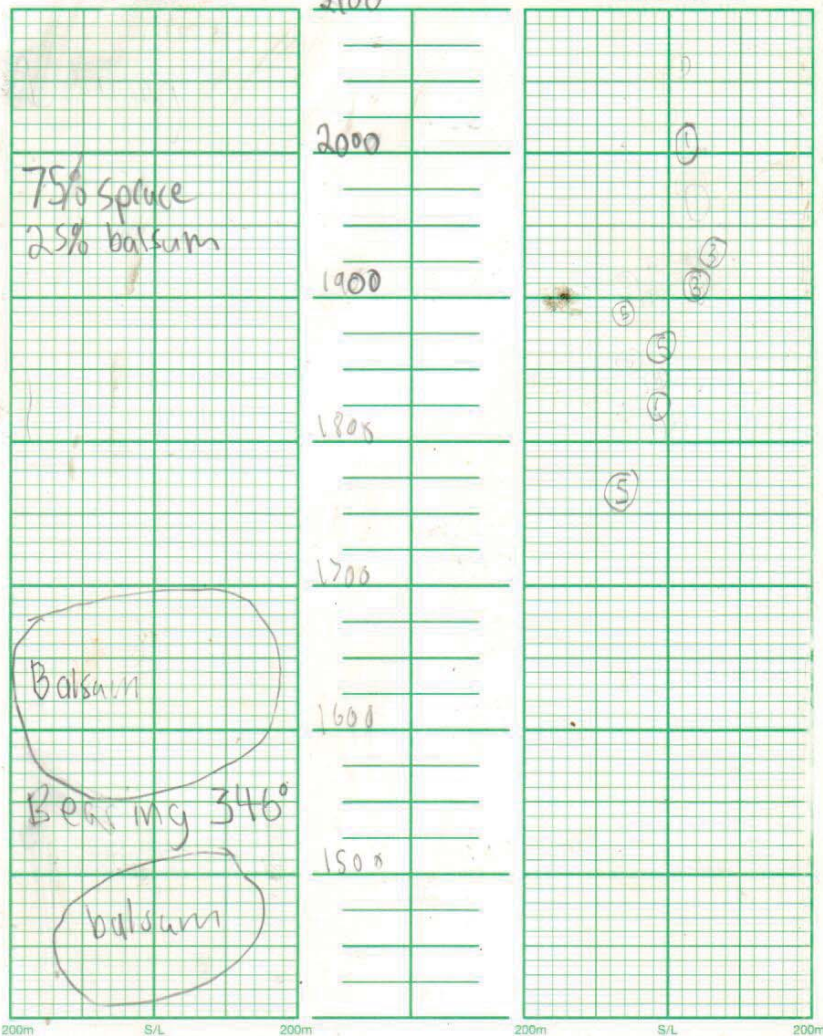
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TOPOGRAPHY

STRIP No.

3100

TIMBER TYPE



STRIP NO.:

BLA-070

DIRECTION:

62°

START STRIP:

JOB NO.:

1500-2100

DATE:

Feb 21/16

CREW:

Blake B

REMARKS:



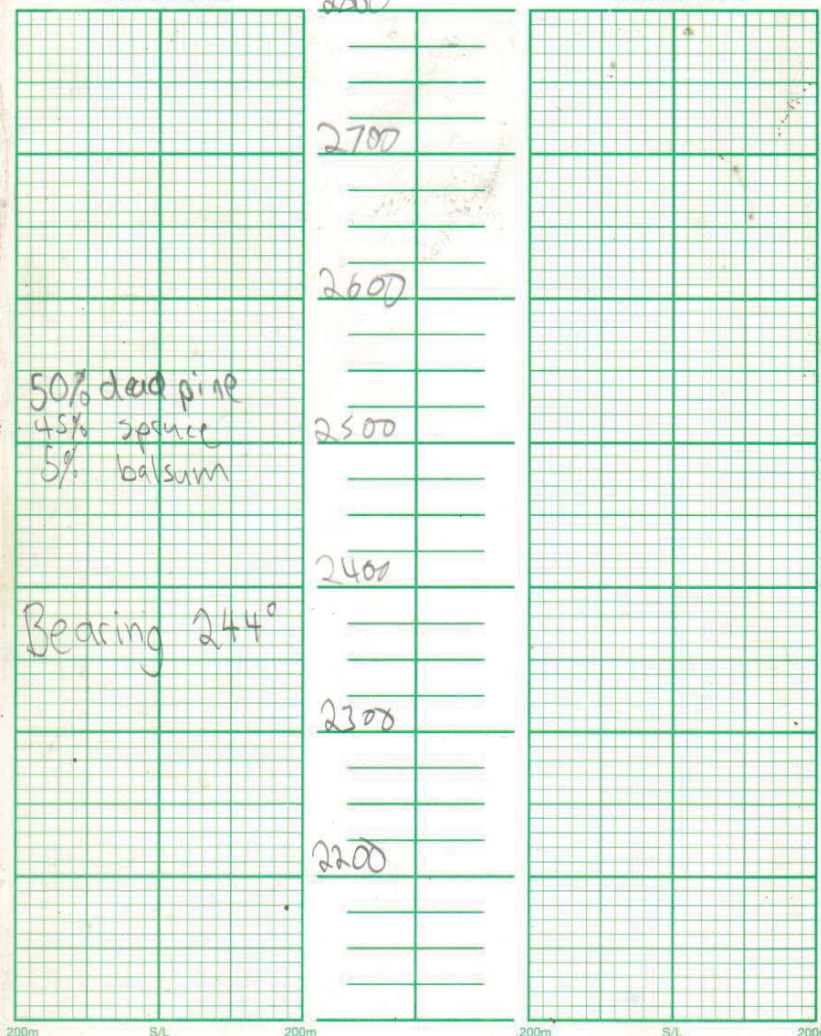
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TOPOGRAPHY

STRIP No.

BLA-070

TIMBER TYPE



STRIP NO.:

BLA-070

DIRECTION:

346°

START STRIP:

2200-2800

JOB NO.:

DATE:

Feb 21/16

CREW:

Blake B

REMARKS:



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