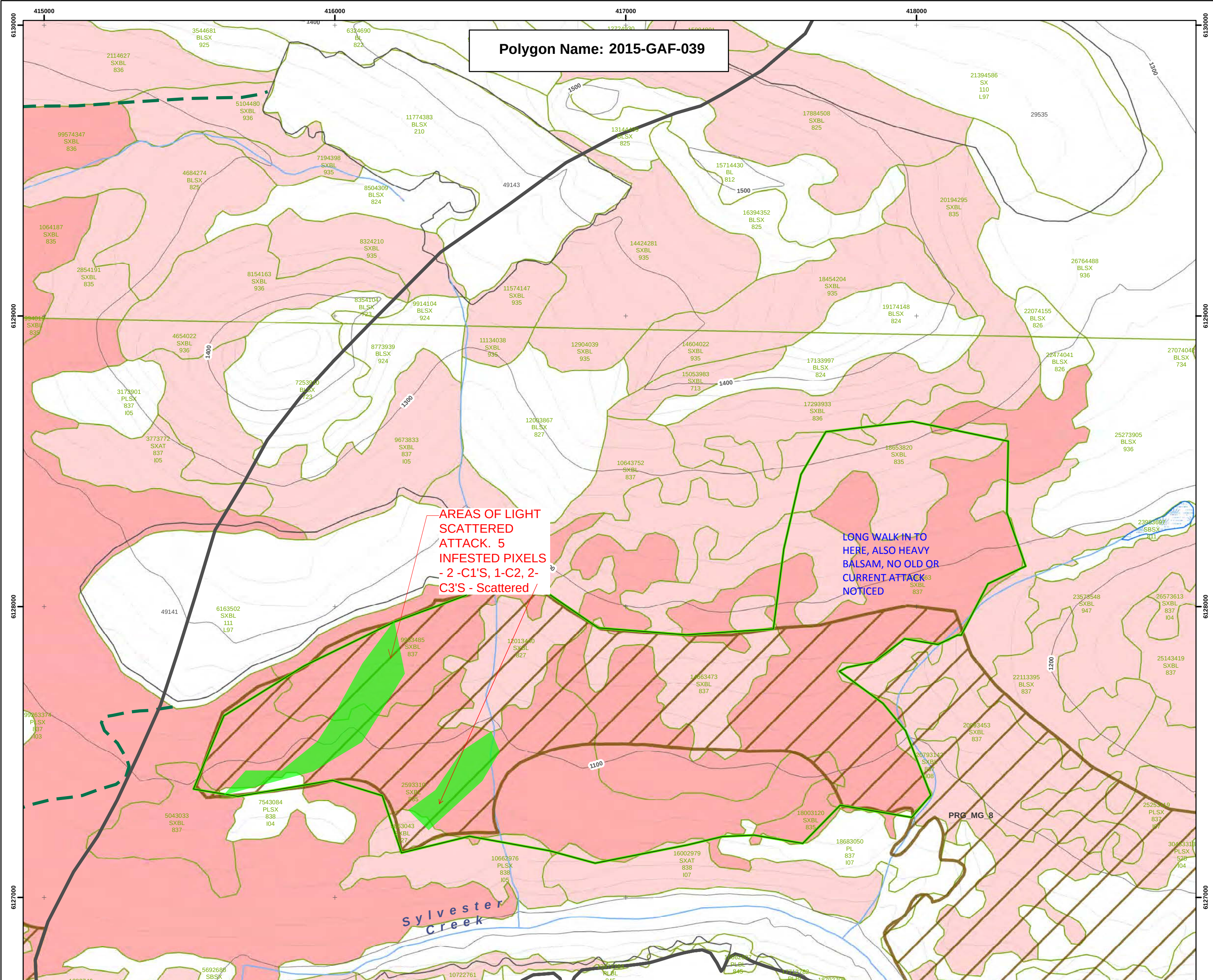
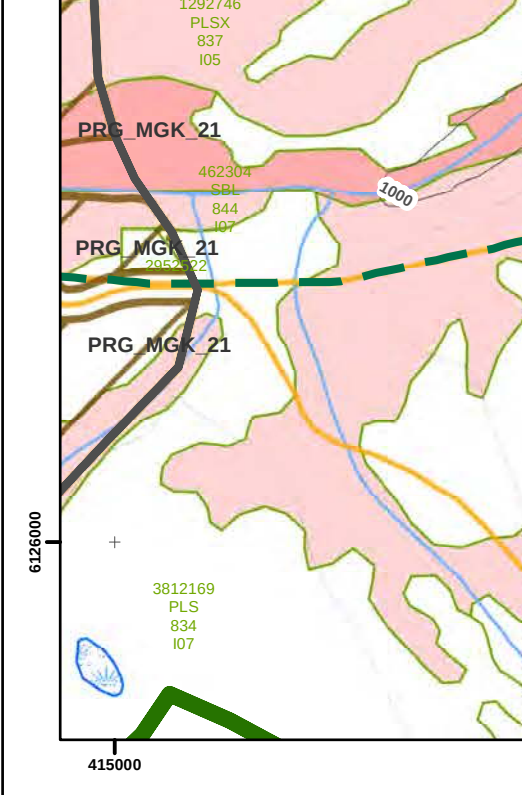




 Ministry of Forests, Lands and Natural Resource Operations

Spruce Bark Beetle Field Map

Polygon Name: 2015-GAF-039

Landscape	Gaffney
Unit/BMU:	Omineca
Region:	Mackenzie
District:	093N08
Mapsheets:	210.68
Hectares:	1:10,000
Scale:	When plotted on ANSIC
Coordinate System:	NAD 1983 UTM Zone 10N
Datum:	North American 1983
Date Drawn:	03/12/2015
Drawn By:	msnively



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WALKTHROUGH DISTANCE: **9100****SPRUCE BARK BEETLE REPORT
FH16DMK016,017**POLYGON: **2015-GAF-039** HECTARES: **210.68**ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4) **5 5.5%****SUMMARY OF CURRENT INFESTATION**

Walkthrough showed attack at all stages and very scattered considering how large the polygon is. East portion of polygon not surveyed but mainly Balsam from walk and look beyond. Walks kept getting longer and longer from access point with difficult conditions. Each infested pixel represented by one infected tree so very spread out.

LIGHT SCATTERED ATTACK

ACCESS

Truck parked on Giscome road. Sledged 5km down unplowed road, then walked 800m to start of Polygon on west edge. (Difficult winter conditions at time of walkthrough)

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

Long skinny polygon, couldn't continue to the furthest east portion, no attack found in east. Steep slopes throughout ranging 0-40%. Heavy areas of Balsam towards the east.

SIZE, BOUNDARY and PATTERN OF INFESTATION

Total found on walkthrough was 2-C1'S, 1 C2, and 2 Code 3 2014 attack, 2015 attack is on a 2 year cycle. Patchy scattered attack amongst many old attacked 2013 trees.

INCIDENCE AND SEVERITY OF ATTACK

Total of 5 infested pixels with light scattered recent attack with 2C1'S, 1 C2, AND 2 C3'S. One probe line shows mod attack density and low larval density.

RISK OF BEETLE SPREAD

The east of the polygon is mostly Balsam and polygon has cutblock to the north. Low larval counts in bark sample may not be truly representative. With all stages of attack noticed, moving slowly but will continue to slowly move.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

1km from unplowed road, large polygon with steep slopes and drainages

RECOMMENDATIONS**OPTION 1****TRAP TREES/ FUNNEL TRAPS**

Sanitation and salvage rating Moderate from the one probe line taken where ONE code 1 found. (5 PIXELS INFESTED, ONE TREE IN EACH) This area is about 1km from any road which may make trap trees difficult but some beetle will fly in 2016. Will likely need to do multiple treatments on this area and may be better suited due to its location to wait or use funnel traps

OPTION 2**MONITOR**

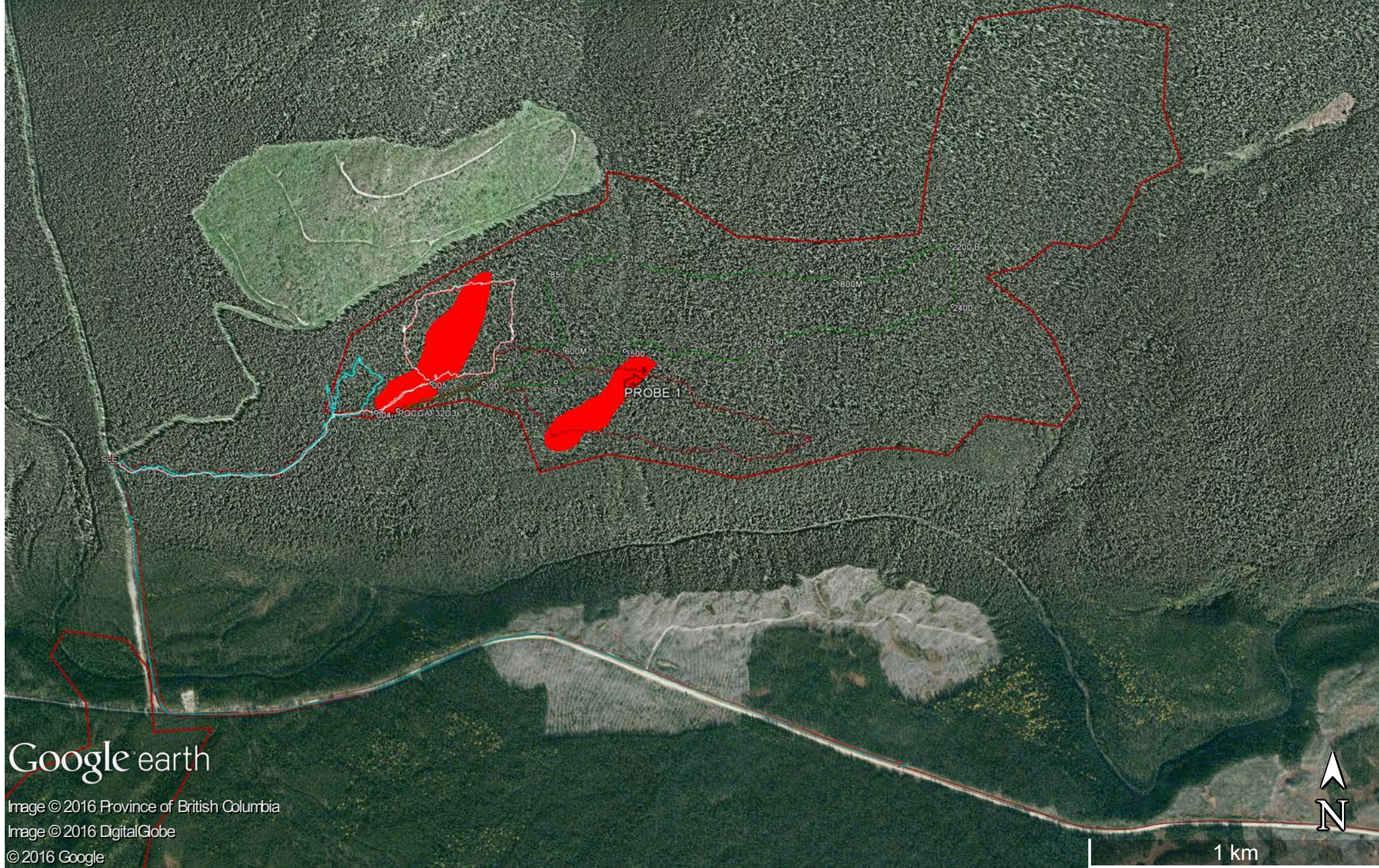
Monitor area as beetle will fly in 2016 and 2017. With location, may be better to schedule another walkthrough 2016/2017 to reevaluate. Mix of all years found in walkthrough and fairly isolated with not a large risk of spread,

2015-GAF-039

SPRUCE BEETLE WALKTHROUGHS

Legend

- PROBES
- RECENTLIGHT SCATTERED ATTACK



Google earth

Image © 2016 Province of British Columbia

Image © 2016 DigitalGlobe

© 2016 Google

1 km

Summary						
2015-GAF-039	HEC	210.68	METERS WALKED	9100	% TRAVERSED	4.3%
PIXELS COVERED BY WALKTHROUGH		91	INFESTED PIXELS		5	ESTIMATED % OF BLOCK INFESTED (From Walk through)
						5.5%

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	13.2	0.0	0.0	0.0	0.0	0.0	0.0	26.4
25.1-30.0	5.3	10.6	0.0	0.0	0.0	0.0	0.0	0.0	15.9
30.1-35.0	7.1	7.1	0.0	0.0	0.0	0.0	0.0	0.0	7.1
35.1-40.0	9.4	0	0.0	0.0	0.0	0.0	0.0	0.0	0
40.1-45.0	11.6	0	0.0	0.0	0.0	0.0	0.0	0.0	0
45.1-50.0	13.8	55.2	13.8	0.0	0.0	0.0	0.0	0.0	0
50.1-55.0	16.2	0	0.0	0.0	0.0	0.0	0.0	0.0	0
55.1-60.0	18.7	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0
60.1 +	25.3	0	0.0	0.0	0.0	0.0	0.0	0.0	0
TOTALS	118.6	104.8	13.8	0	0.0	0.0	0.0	0	49.4

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
	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
1.50	< 3.9 SEVERE Attack Density		>24.9 EXTREME Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough				
% 2015 ATTACK	11.6%	##	SANITATION AND SALVAGE HARVEST PRIORITY RATING	
% 2014 ATTACK	0.0%	##	LIGHT 0-599	LEAVE (Monitor, Trap Trees, Baits, etc)
% 2013 ATTACK	0.0%	##	MODERATE 600-999	PROBE (To Obtain Further Info)
% HOST IN STAND	70.6%	##	HEAVY 1000+	RECOMMEND CRUISING/ LOGGING
			821.4	

From 1 probe line in open stand with one CODE 1

SUMMARY OF ALL CARDS FS1111						NUMBER OF CARDS			1	
ACCESS -		Truck parked on Giscome road. Sledded 5km down inplowed road, than walked 800m to start of Polygon on west edge. (Difficult winter conditions at time of walkthrough)								
POLYGON FEATURES -		Long skinny polygon, couldn't continue to the firthest east portion, no attack found in east. Steep slopes throughout ranging 0-40%. Heavy areas of Balsam towards the east.								
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	4	0	0	0	0	0	0	8	0
25.1-30.0	5.3	2	0	0	0	0	0	0	3	0
30.1-35.0	7.1	1	0	0	0	0	0	0	1	0
35.1-40.0	9.4	0	0	0	0	0	0	0	0	0
40.1-45.0	11.6	0	0	0	0	0	0	0	0	0
45.1-50.0	13.8	4	1	0	0	0	0	0	0	0
50.1-55.0	16.2	0	0	0	0	0	0	0	0	0
55.1-60.0	18.7	1	0	0	0	0	0	0	0	0
60.1 +	25.3	0	0	0	0	0	0	0	0	0
TOTALS		12	1	0	0	0	0	0	12	0
BARK SAMPLES 15 cm x 15 cm		NO. ENTRAN CE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE ADULTS	NO. CALLOW	FRESH (GREEN) BLOWDOWN			
							Attacked Yr		Yr	Unattacked
2		3	0	3	0	0	0		0	0
SIZE, BOUNDARY AND PATTERN OF THE INFESTATION										
Total found on walkthrough was 2-C1'S, 1 C2, and 2 Code 3 2014 attack, 2015 attack is on a 2 year cycle. Patchy scattered attack amongst many old attacked 2013 trees.										
INCIDENCE AND SEVERITY OF THE INFESTATION										
Total of 5 infested pixels with light scattered recent attack with 2C1'S, 1 C2, AND 2 C3'S. One pprobe line shows mod attack density and low larval density.										
RISK OF BEETLE SPREAD										
The east of the polygon is mostly Balsam and polygon has cutblock to the north. Low larval counts in bark sample may not be truly representative. With all stages of attack noticed, moving slowly but will continue to slowly move.										
ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES										
1km from unplowed road, large polygon with steep slopes and drainages										

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ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

1km from unplowed road, large polygon with steep slopes and drainages



BRITISH
COLUMBIA



BEETLE PROBE CARD

GIAF 39

LOCATION GIAF 32		ELEVATION		LATITUDE		PAGE OF				
BEARING 265	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									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	19.7	•								
60.1 -	25.3									
TOTALS		12	1							12
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
N	2	0	2	/	/					
S	1	0	1	/	/					
COMMENTS DBH 75.5cm										
CREW NAMES PATRICK FLETCHER						DATE Y M D 2010 FEB 1				

GAF039

COMPASS AND TRAVERSE SHEET

TOPOGRAPHY		TIMBER TYPE	
		100	274°
		900	
		800	168°
		700	78°
		600	
		500	
		400	58°
		300	
		200	324°
		100	
		100	200°

C.P. No.	BLOCK	GAF	39
DIRECTION	START OF STRIP		
JOB NO.	DATE		
CREW	JAN 27 2016		
REMARKS	Part 10115		



COMPASS AND TRAVERSE SHEET

TOPOGRAPHY		TIMBER TYPE	
	1300	90/10 Bl/Sw	
	1200	78° bearing	
	1100	30% Slope	
	1000	95/5 Bl/Sw	
	900	52° bearing @ 900m	
	800	80/20 Bl/Sw	
	700	324° bearing @ 700	
	600	60/20/20 Sw/Bl/Al	
②	500m	72° bearing	
		New POC @ 500m	
	400		
		40-60% Slope	
		80/20 Bl/Sw	
⑤	200		
		80/20 Bl/Sw	
	0m	57° bearing	

C.P. No	BLOCK	START OF STRIP
DIRECTION 37°		100 - 11000
JOB NO GAF-039		DATE Jan 27th
CREW Aaron Colebant, Pat Pelletier		
REMARKS 04 0415686 EW 1370		

COMPASS AND TRAVERSE SHEET

[illegible]

FS 375 HFP 92/1 7530881021

GAT 34

STRIP No.

TIMBER TYPE

TOPOGRAPHY	STRIP No.	TIMBER TYPE
	1600m	
	1900	
	1600 1500	280°
	1300	60°
	1100m	
	900m	
	600	90°
	500	150°
	400 300m	110°
		70°

STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

DATE: _____

CREW:

REMARKS:

FEB 1



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COMPASS AND TRAVERSE SHEET

COLUMBIA		TOPOGRAPHY		TIMBER TYPE
			2600	
			2400	263° @ 2400
				69° @ 2200
			2000	
	(5)			20% Slope
				90/10 Bl/Sw
			1600	
				90/10 Bl/Sw
			1200	
				20% Slope
				52° @ 850m
(5)			200	
				345° @ 600m
			400	
				70/30 Bl/Sw
				77° bearing

CP No	BLOCK	104 0415760
DIRECTION 770	START OF STRIP	6127373
JOB NO GAF 3a	DATE	Feb 1, 2016
CREW Aaron Cobbank		
REMARKS Heavy Bl, especially higher elev.		



COMPASS AND TRAVERSE SHEET

[illegible]

C.P. No.	BLOCK	START OF STRIP
DIRECTION	121	
JOB NO.		DATE
CREW		
REMARKS		

PS 375 WPP 921 7530881021