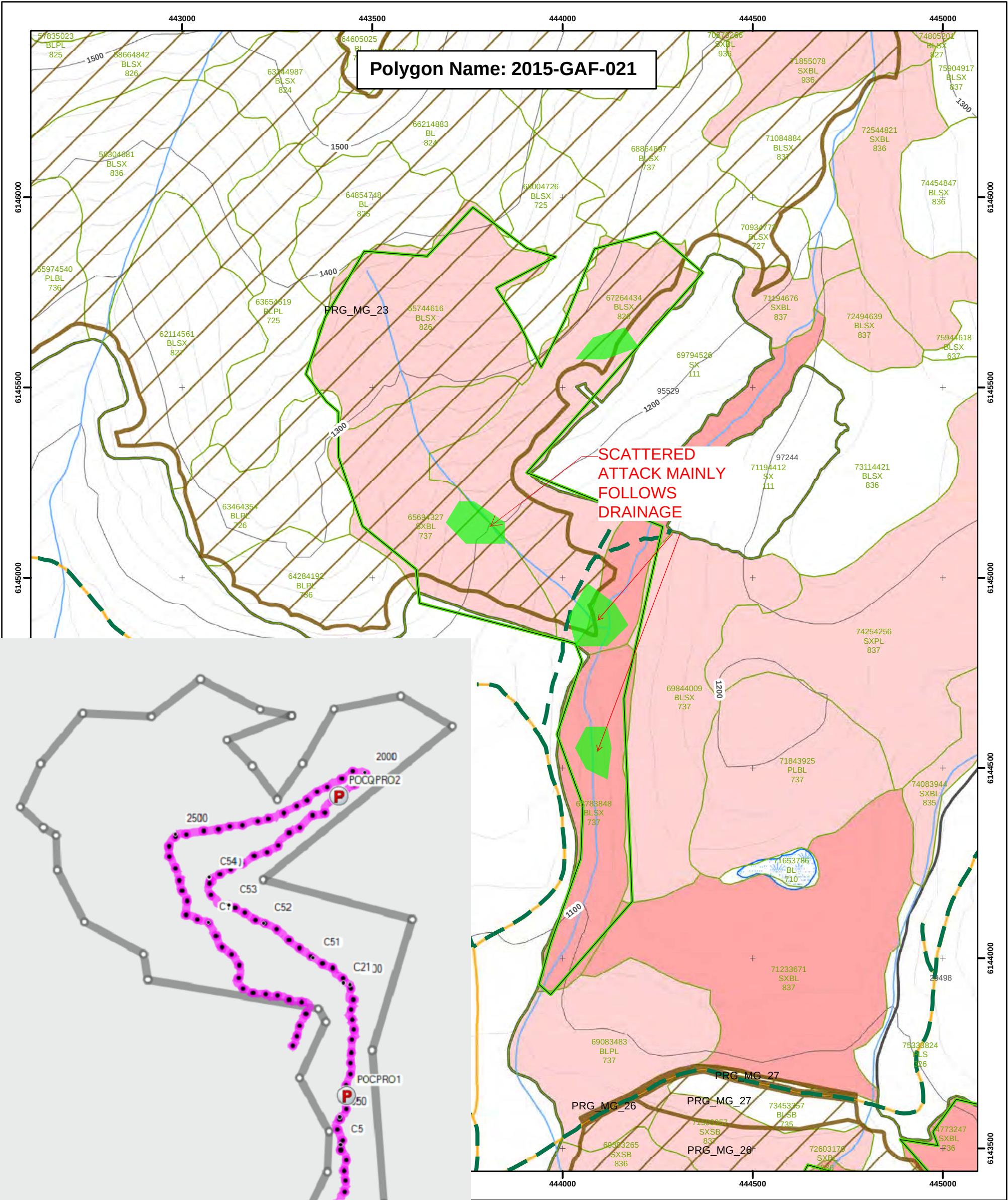
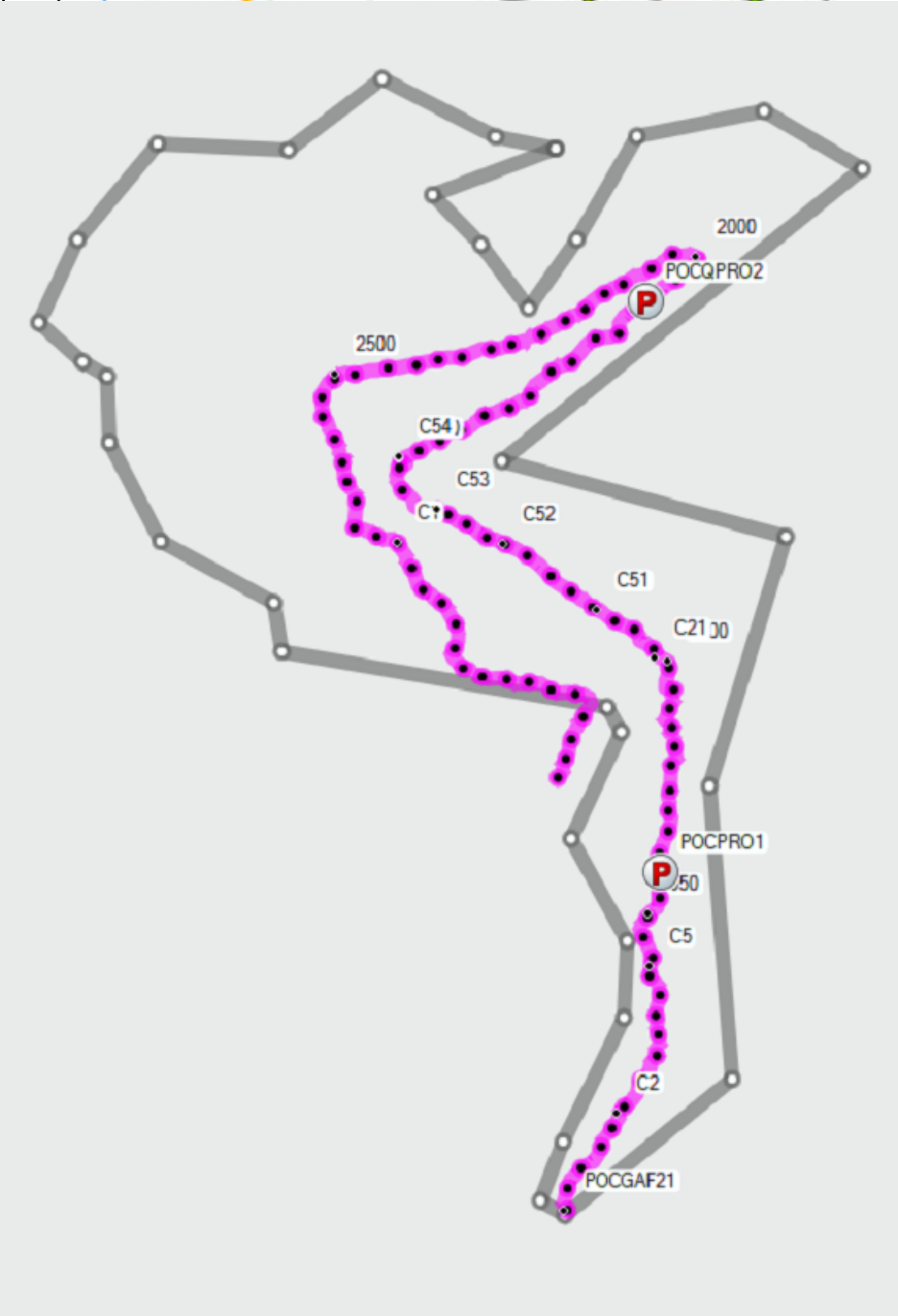




Polygon Name: 2015-GAF-021

Landscape Unit/BMU: Gaffney

Region: Omineca

District: Mackenzie

Mapsheet: 093O05

Hectares: 81.6

Scale: 1:10,000

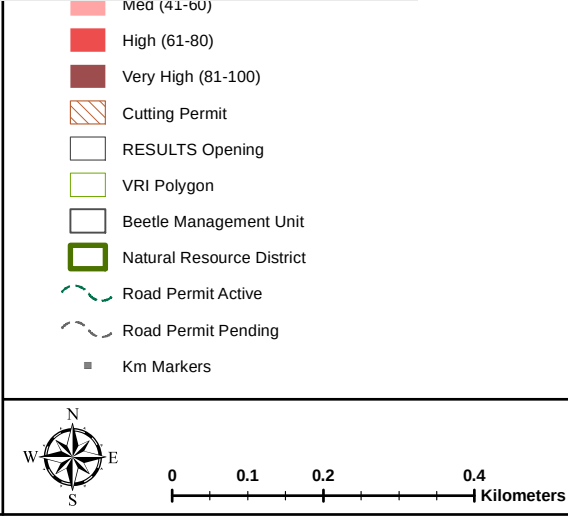
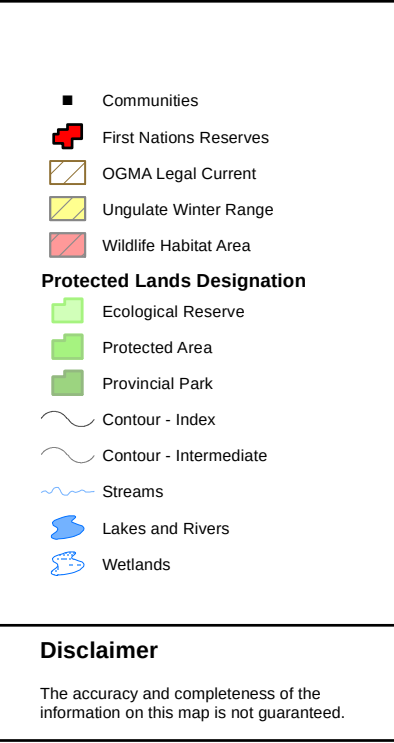
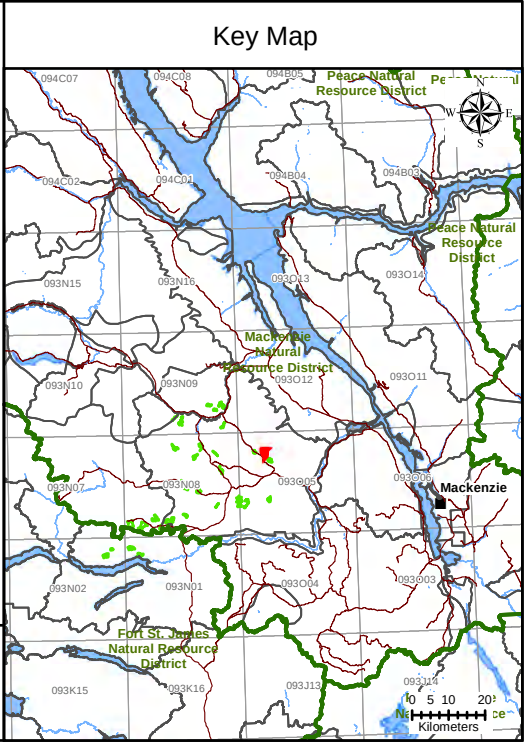
When plotted on 11x17

Coordinate System: NAD 1983 UTM Zone 10N

Datum: North American 1983

Date Drawn: 02/12/2015

Drawn By: msnively



**SENECA ENTERPRISES LTD.**

PO BOX 1902, PRINCE GEORGE, BC, V2L 5E3

Phone: (250) 561-0890, Fax: (250) 564-3275

**SPRUCE BARK BEETLE REPORT
FH16DMK016,017**

POLYGON: 2015-GAF-021

HECTARES:

81.60

WALKTHROUGH DISTANCE:

3200

ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4)

4 12.5%

SUMMARY OF CURRENT INFESTATION

Walkthrough estimate shows 12.5% infested pixels from walkthrough. Walkthrough followed drainage and patchy attack within drainage surrounded by old attacked spruce. Spruce small DBH and much of the attack was strip attack and evidence of a pitchout as well. Most of the attack on year 1 of a 2 year cycle.

SCATTERED ATTACK THROUGH DRAINAGE**ACCESS**

Access is just off Munro FSR. Had to sled 3km as unplowed.

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

Slopes throughout range from 0-30%. Areas of heavy Balsam within, and average 60% Spruce stand.

SIZE, BOUNDARY and PATTERN OF INFESTATION

Scattered attack with Code 1 and 2 attack found scattered within bottom of drainage. One other attack to the north outside of drainage. Mainly small DBH Spruce, several strip attacks and a pitchout noticed as well. Scattered old attack within drainage as well.

INCIDENCE AND SEVERITY OF ATTACK

Sanitation rating light as spread out along drainage. While 12.5% shows infected pixels, walkthrough concentrated in drainages.

RISK OF BEETLE SPREAD

Attack is mainly limited within Steeper drainage and polygon surrounded mostly by cutblocks. Attack is strip attack on smaller DBH Balsam where also evidence of pitchouts.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Are access roads that run alongside parts of the polygon, are some steeper sections and drainages, slopes range 1-30%.

RECOMMENDATIONS**OPTION 1****MONITOR**

Polygon near 2015-GAF-020 which we couldn't get to at his time with current snow conditions and difficult access. Schedule another walkthrough with this polygon 2016-2017. Low Sanitation rating and scattered attack within drainage.

OPTION 2**TRAP TREES/ MONITOR**

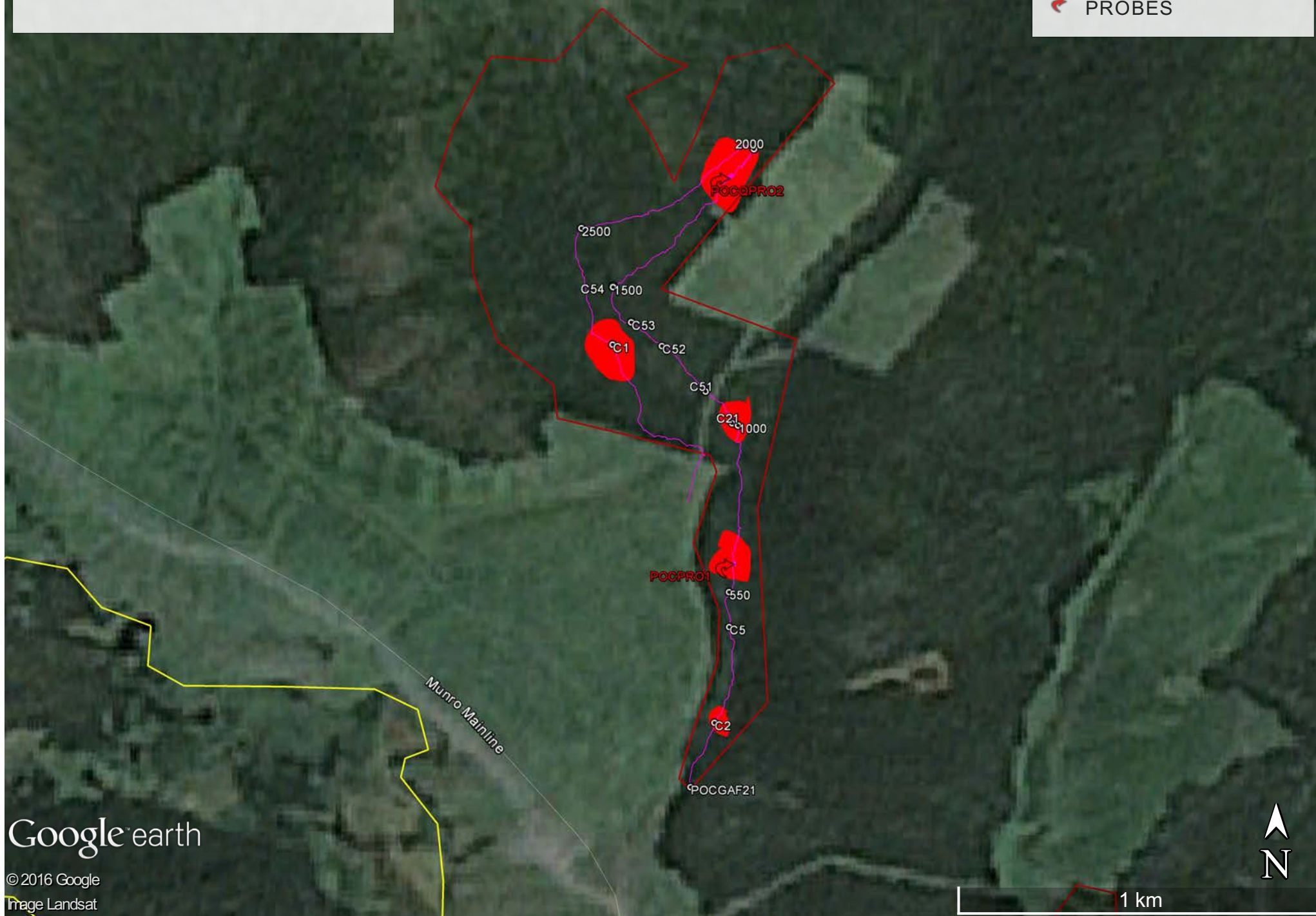
As much of the attack within drainage and close to existing road, may want to have trap trees placed as close to the drainage and road to capture flights. As most are on first year of 2 year cycle, can schedule next year.

2015-GAF-021

SPRUCE BEETLE WALKTHROUGHS

Legend

- SCATTERED ATTACK
- PROBES



Google earth

© 2016 Google
Image Landsat

2015-GAF-021	HEC	81.60	METERS WALKED	3200	% TRAVERSED	3.9%
PIXELS COVERED BY WALKTHROUGH	32	INFESTED PIXELS	4	ESTIMATED % OF BLOCK INFESTED (From Walk through)		12.5%

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	49.5	3.3	0.0	0.0	0.0	6.6	0.0	59.4
25.1-30.0	5.3	95.4	0.0	0.0	0.0	0.0	0.0	0.0	47.7
30.1-35.0	7.1	71	0.0	0.0	0.0	0.0	0.0	0.0	56.8
35.1-40.0	9.4	75.2	9.4	0.0	0.0	0.0	0.0	0.0	65.8
40.1-45.0	11.6	92.8	11.6	0.0	0.0	0.0	0.0	0.0	46.4
45.1-50.0	13.8	0	0.0	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	0	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	414.8	383.9	24.3	0	0.0	0.0	6.6	0	276.1

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
2.25	< 3.9 SEVERE Attack Density	4.00	>24.9 EXTREME Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough

% 2015 ATTACK	5.9%	5.9	SANITATION AND SALVAGE HARVEST PRIORITY RATING			
% 2014 ATTACK	0.0%	##	LIGHT	0-599	LEAVE (Monitor, Trap Trees, Baits, etc)	375.6
% 2013 ATTACK	1.6%	##	MODERATE	600-999	PROBE (To Obtain Further Info)	
% HOST IN STAND	60.0%	##	HEAVY	1000+	RECOMMEND CRUISING/ LOGGING	

SUMMARY OF ALL CARDS FS1111							NUMBER OF CARDS		2	
ACCESS -		Access is just off Munro FSR. Had to sled 3km as unplowed.								
POLYGON FEATURES -		Slopes throughout range rom 0-30%. Areas of heavy Balsam within, and average 60% Spruce stand.								
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	15	1	0	0	0	2	0	18	0
25.1-30.0	5.3	18	0	0	0	0	0	0	8	1
30.1-35.0	7.1	10	0	0	0	0	0	0	8	0
35.1-40.0	9.4	8	1	0	0	0	0	0	6	1
40.1-45.0	11.6	8	1	0	0	0	0	0	4	0
45.1-50.0	13.8	0	0	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	0	0	0	0	0	0	0	0	0
60.1 +	25.3	0	0	0	0	0	0	0	0	0
TOTALS		59	3	0	0	0	2	0	44	2
BARK SAMPLES 15 cm x 15 cm	NO. ENTRANC E HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE ADULTS	NO. CALLOW	FRESH (GREEN) BLOWDOWN				
						Attacked Yr	Yr ____	Unattacked		
4	9	0	16	0	2	0		0	0	0
SIZE, BOUNDARY AND PATTERN OF THE INFESTATION										
Scattered attack with Code 1and 2 attack found scattered within bottom of drainage. One other attack to the north outside of drainage. Mainly small DBH Spruce, several strip attacks and a pitchout noticed as well. Scattered old attack within drainage as well.										
INCIDENCE AND SEVERITY OF THE INFESTATION										
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RISK OF BEETLE SPREAD										
Attack is mainly limited within Steeper drainage and polygon surrounded mostly by cutblocks. Attack is strip attack on smaller DBH Balsam where also evidence of pitchouts.										
ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES										
Are access roads that run alongside parts of the polygon, are some steeper sections and ddrainages, slopes range 1-30%.										

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BEETLE PROBE CARD

LOCATION <u>SAF 21</u> <u>10 N 0444097</u> <u>6144526</u>		ELEVATION	LATITUDE	PAGE	OF						
BEARING <u>11°</u>	STRIP LINE NO <u>Probe 1</u>	STRIP WIDTH <u>10m</u>	DISTANCE <u>100m</u>	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										
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		<u>29</u>						<u>2</u>		<u>16</u>	
BARK SAMPLES 15cm x 15cm		NO ENTRANCE HOLES	NO PARENT ADULTS	NO LARVAE	NO PUPAE	NO CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
							Attacked Unattacked				
North											
South											
COMMENTS <u>① Bark Sample</u>											
CREW NAMES <u>Aaron Colebant</u>						DATE <u>2015</u> <u>02</u> <u>02</u>					



BEETLE PROBE CARD

LOCATION <u>SAF 21</u> <u>10 N 0444892</u> <u>6145563</u>		ELEVATION	LATITUDE	PAGE	OF						
BEARING	STRIP LINE NO <u>Probe 2</u>	STRIP WIDTH <u>10m</u>	DISTANCE <u>100m</u>	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										
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		<u>30</u>	<u>2</u>							<u>2.6</u>	<u>2</u>
BARK SAMPLES 15cm x 15cm		NO ENTRANCE HOLES	NO PARENT ADULTS	NO LARVAE	NO PUPAE	NO CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
							Attacked Unattacked				
North											
South											
COMMENTS <u>① Bark Sample</u>											
CREW NAMES <u>Aaron Colebant</u>						DATE <u>2016</u> <u>02</u> <u>02</u>					



STRIP NO. 1
START STRIP 104 0443970
JOB NO. GAF 21

DIRECTION 11°
DATE Feb 2nd, 2015



STRIP NO. 1
START STRIP
JOB NO.

DIRECTION
DATE

TOPOGRAPHY	STRIP No.	TIMBER TYPE
	2700	
		20% Slope
	2500	150° @ 2500
		50/50 Sw/B
	2300	
		20% Slope
	2100	⊕ Scale change
		225° bearing @ 2050
	2050	50/50 Sw/B
		270° bearing @ 2000
	2000	
		20% Slope
	1950	50/50 Sw/B
		Probed @ 1925
	1900	

STRIP NO.

DIRECTION

START STRIP

JOB NO.

GAPAL

DATE

Feb 23, 2016

TOPOGRAPHY	STRIP No.	TIMBER TYPE
	2700	
		20% @ 3180m
	3100	
	2900	
		50/50 Sw/B
		30% Slope
	2700	

STRIP NO.

DIRECTION

START STRIP

JOB NO.

DATE