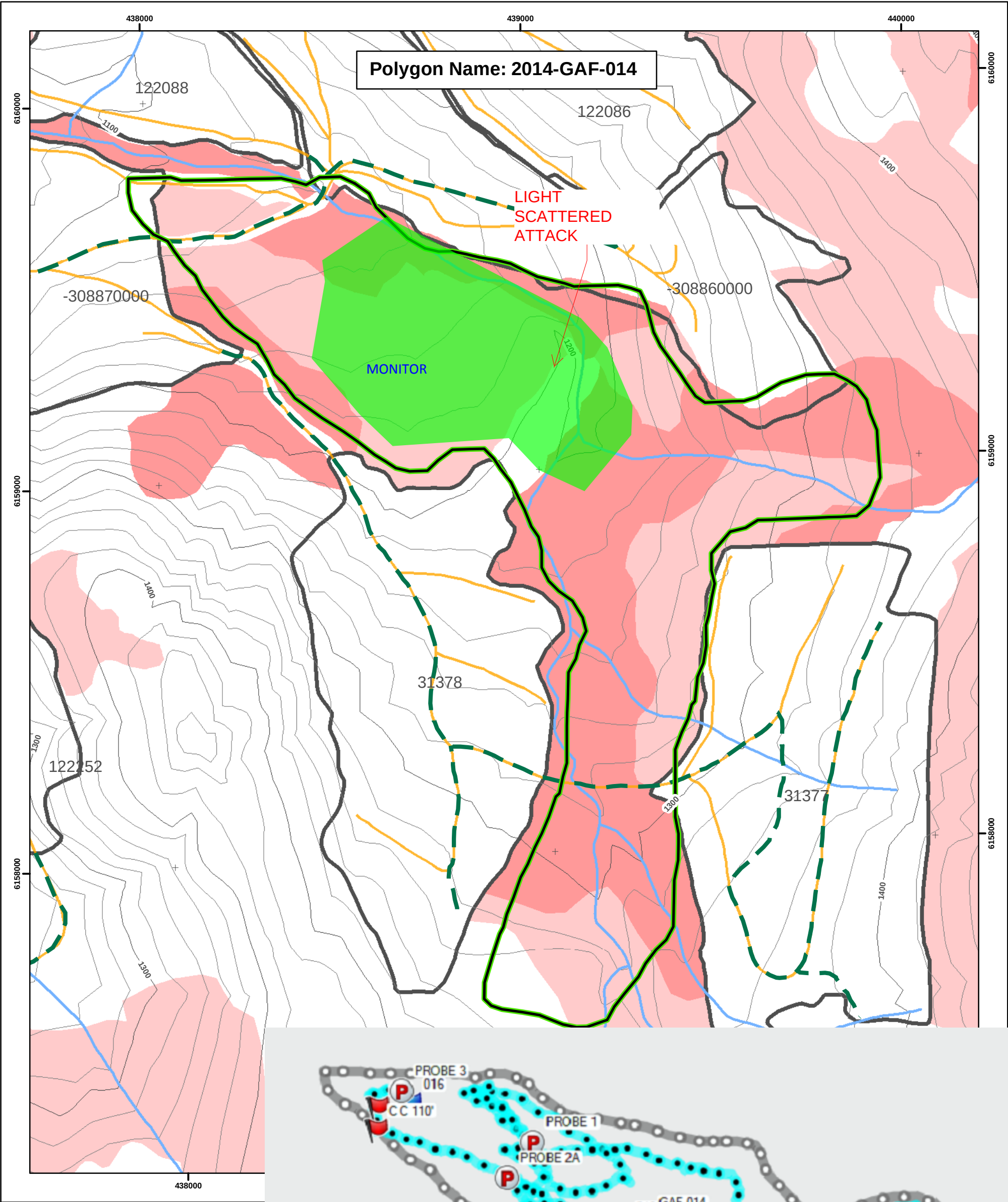






Ministry of
Forests, Lands and
Natural Resource Operations

Spruce Bark Beetle Field Map

Polygon Name: 2014-GAF-014

Landscape	Gaffney
Unit/BMU:	
Region:	Omineca
District:	Mackenzie
Mapsheet:	093O12
Hectares:	139.25
Scale:	1:10,000
When plotted on 11x17	
Coordinate System:	PCS Albers
Datum:	North American 1983
Date Drawn:	03/06/2015
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
FH16DMK010**

POLYGON: GAF-014

HECTARES: 139.25

WALKTHROUGH DISTANCE: 7000

ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4)

7 10.0%

SUMMARY OF CURRENT INFESTATION

Walkthrough estimate can map out roughly 20% of Polygon has some Code 1 attack. It is quite light and scattered, surrounded throughout by old Code 5 attack.

LIGHT SCATTERED ATTACK ISOLATED TO THE NORTH OF POLYGON

ACCESS

Access to polygon was by ATV on brushed in road that touched the north of Polygon. Lots of Saw work required to get close with both Truck and ATV

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

Polygon gently sloped with some steeper pitches leading through the drainages. Polygon roughly 60% spruce from walkthrough, mixed stands with Balsam and Pine. Spruce average DBH roughly 30-35cm.

SIZE, BOUNDARY and PATTERN OF INFESTATION

Large Polygon of 140 Hectares. Lot of Old Spruce and Pine attack throughout with one area in the north of the Polygon containing current light scattered attack on a 2 year cycle.

INCIDENCE AND SEVERITY OF ATTACK

From Probe lines established in attacked areas, shows a high attack density but a low eman Larval Density. Very light and patchy attack through about 20% of polygon and the rest of polygon just old code 5 attack.

RISK OF BEETLE SPREAD

Polygon has logged blocks surrounding it however beetle can continue to spread through Polygon

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Polygon has a couple drainages and creeks running through as well. It is fairly sloped from west to east with elevation change of 200m. Road

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

Sanitation and Salvage Rating is LIGHT, isolated and scattered attack and will need to continue to Monitor.

OPTION 2**TRAP TREES/ MONITOR**

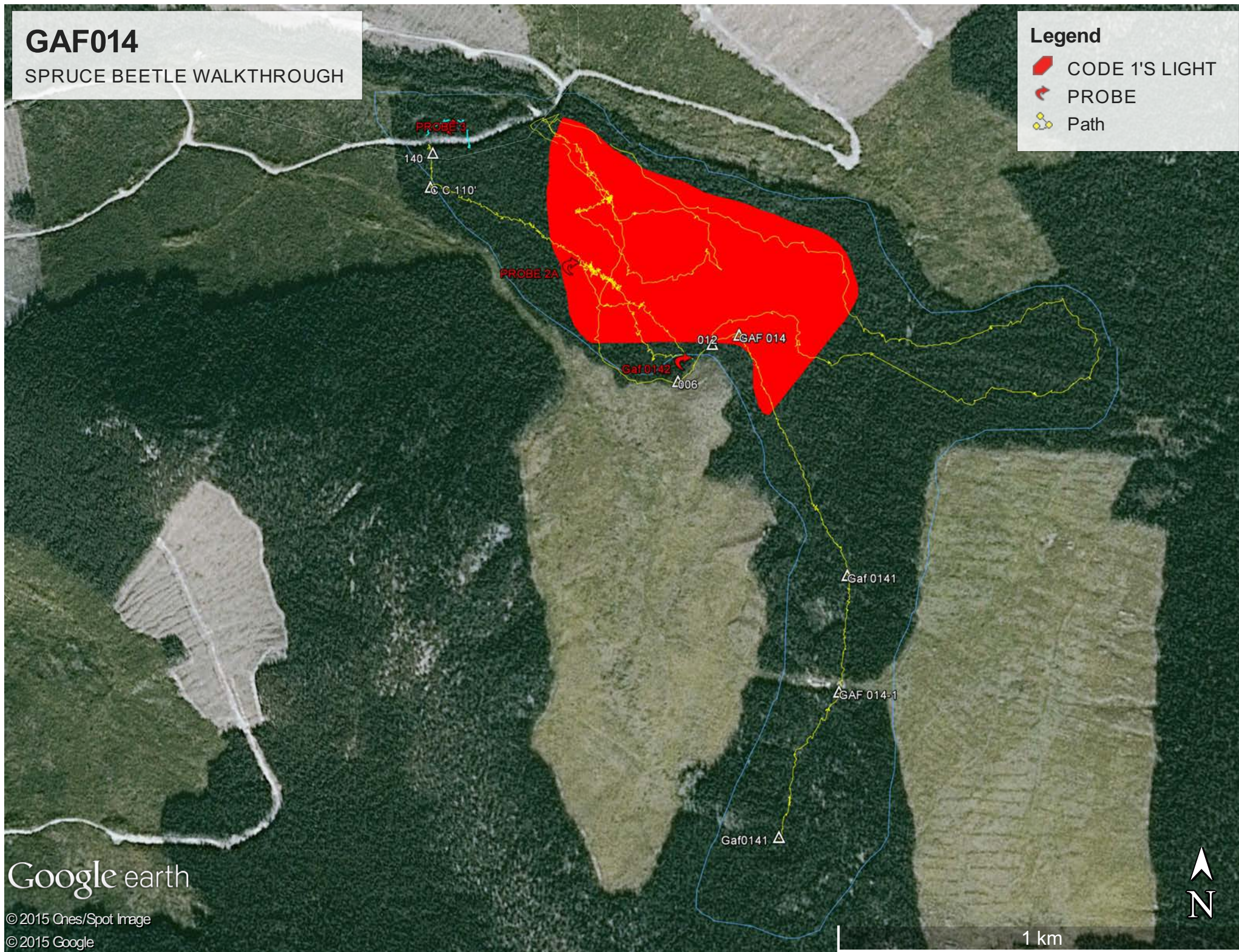
If in the area, road comes through to the North, may consider Trap Tree trail along road to hold infestation and monitor

GAF014

SPRUCE BEETLE WALKTHROUGH

Legend

-  CODE 1'S LIGHT
-  PROBE
-  Path



Summary						
GAF-014	HEC	139.25	METERS WALKED	7000	% TRAVERSED	5.0%
PIXELS COVERED BY WALKTHROUGH	70	INFESTED PIXELS	7	ESTIMATED % OF BLOCK INFESTED (From Walk through)		10.0%

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	82.5	0.0	0.0	0.0	0.0	19.8	0.0	92.4
25.1-30.0	5.3	116.6	0.0	0.0	0.0	0.0	37.1	0.0	68.9
30.1-35.0	7.1	120.7	0.0	0.0	0.0	0.0	7.1	0.0	42.6
35.1-40.0	9.4	65.8	0.0	0.0	0.0	0.0	9.4	0.0	28.2
40.1-45.0	11.6	116	11.6	0.0	11.6	0.0	0.0	0.0	0
45.1-50.0	13.8	96.6	0.0	0.0	0.0	0.0	0.0	0.0	0
50.1-55.0	16.2	48.6	0.0	0.0	0.0	0.0	0.0	0.0	0
55.1-60.0	18.7	37.4	18.7	0.0	0.0	0.0	0.0	0.0	0
60.1 +	25.3	50.6	0.0	0.0	0.0	0.0	0.0	0.0	0
TOTALS	850.1	734.8	30.3	0	11.6	0.0	73.4	0	232.1

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		< 4.9 LOW Mean Larval Density
3.50	< 3.9 SEVERE Attack Density	4.17	< 4.9 LOW Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough

% 2015 ATTACK	3.6%	3.6	SANITATION AND SALVAGE HARVEST PRIORITY RATING			
% 2014 ATTACK	1.4%	##	LIGHT	0-599	LEAVE (Monitor, Trap Trees, Baits, etc)	521.0
% 2013 ATTACK	8.6%	##	MODERATE	600-999	PROBE (To Obtain Further Info)	
% HOST IN STAND	78.6%	##	HEAVY	1000+	RECOMMEND CRUISING/ LOGGING	

SUMMARY OF ALL CARDS FS1111							NUMBER OF CARDS			3	
ACCESS -		Access to polygon was by ATV on brushed in road that touched the north of Polygon. Lots of Saw work required to get close with both Truck and ATV									
POLYGON FEATURES -		Polygon gently sloped with some steeper pitches leading through the drainages. Polygon roughly 60% spruce from walkthrough, mixed stands with Balsam and Pine. Spruce average DBH roughly 30-35cm.									
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	25	0	0	0	0	6	0	28	0	
25.1-30.0	5.3	22	0	0	0	0	7	0	13	0	
30.1-35.0	7.1	17	0	0	0	0	1	0	6	0	
35.1-40.0	9.4	7	0	0	0	0	1	0	3	0	
40.1-45.0	11.6	10	1	0	1	0	0	0	0	0	
45.1-50.0	13.8	7	0	0	0	0	0	0	0	0	
50.1-55.0	16.2	3	0	0	0	0	0	0	0	0	
55.1-60.0	18.7	2	1	0	0	0	0	0	0	0	
60.1 +	25.3	2	0	0	0	0	0	0	0	0	
TOTALS		95	2	0	1	0	15	0	50	0	
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	
6		21	2	25	0	0	0		0	0	
SIZE, BOUNDARY AND PATTERN OF THE INFESTATION											
Large Polygon of 140 Hectares. Lotd of Old Spruce and Pine attack throughout with one area in the north of the Polygon containing current light scattered attack on a 2 year cycle.											
INCIDENCE AND SEVERITY OF THE INFESTATION											
From Probe lines established in attacked areas, shows a high attack density but a low eman Larval Density. Very light and patchy attack through about 20% of polygon and the rest of polygon just old code 5 attack.											
RISK OF BEETLE SPREAD											
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ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES											
Polygon has a couple drainages and creeks running through as well. It is fairly sloped from west to east with elevatvin change of 200m. Roads into north of Polygon are in place but older and overgrown.											

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GAF-014 Probe 1

SPRUCE BEETLE
PROBE CARD

LOCATION 55°34'38.3" 123°58'26.2"		PAGE 1 OF 1							
BEARING 250°	DISTANCE 100m	STRIP WIDTH 10m							
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	
17.5 - 25.0	3.3	1					1		11
25.1 - 30.0	5.3	1111					1		11011
30.1 - 35.0	7.1	1111					1		1
35.1 - 40.0	9.4	1							1
40.1 - 45.0	11.6	1111							
45.1 - 50.0	13.8	11111							
50.1 - 55.0	16.2	11							
55.1 - 60.0	18.7	11 1							
60.1 +	25.3	11							
TOTALS		28	1				3		10
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
						Attacked	Unattacked		
N	20	0	5	0	0				
S	15	0	6	0	0				
COMMENTS wide spaced trees - open canopy flat terrain - one \$X with larvae									
CREW NAMES Don & Dave						DATE Y M D 15 10 13			

FS 1111 RPG 2000/01 7530881048 (100/bdl)

SPRUCE BEETLE
PROBE CARD

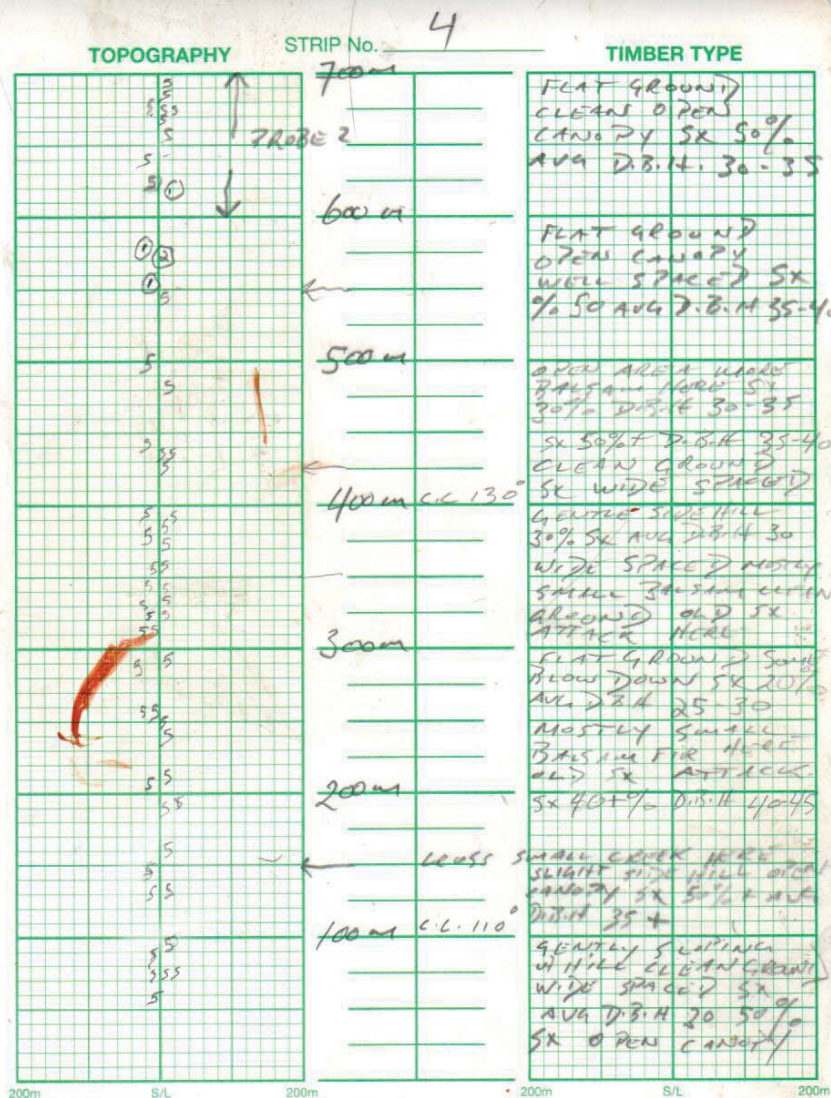
LOCATION GAF-014 N. 55°34'55.4" W 123°58'48.6"		PAGE 1 OF 1							
BEARING 130°	DISTANCE 100-m	STRIP WIDTH 10m							
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES
			1	2	3	4	5	6	
17.5 - 25.0	3.3	11111					111		111111111
25.1 - 30.0	5.3	11111					111		1
30.1 - 35.0	7.1	11111							1111
35.1 - 40.0	9.4	1							1
40.1 - 45.0	11.6	11111							
45.1 - 50.0	13.8								
50.1 - 55.0	16.2	1							
55.1 - 60.0	18.7								1
60.1 +	25.3								
TOTALS		30	1				9		19 Balsam F
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	2	7	1	1				
S	5	1	7	1	1				
COMMENTS									
CREW NAMES Don & Dave						DATE Y M D 15 10 13			

FS 1111 RPG 2000/01 7530881048 (100/bdl)

3.

SPRUCE BEETLE PROBE CARD

LOCATION G.A.F. 014		N. 55° 34, 763' W. 123° 58, 835'		PAGE 1 OF 1					
BEARING 250°		DISTANCE 100 m		STRIP WIDTH 10 m					
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	
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		36			1		3		21
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
						Attacked	Unattacked		
NO SAMPLE	/	/	/	/	/				
NO SAMPLE	/	/	/	/	/				
COMMENTS NO BEETLE FOUND THIS PROBE									
CREW NAMES DON & DAVE						DATE Y M D 15 10 15			



STRIP NO: 4 DIRECTION: 170°

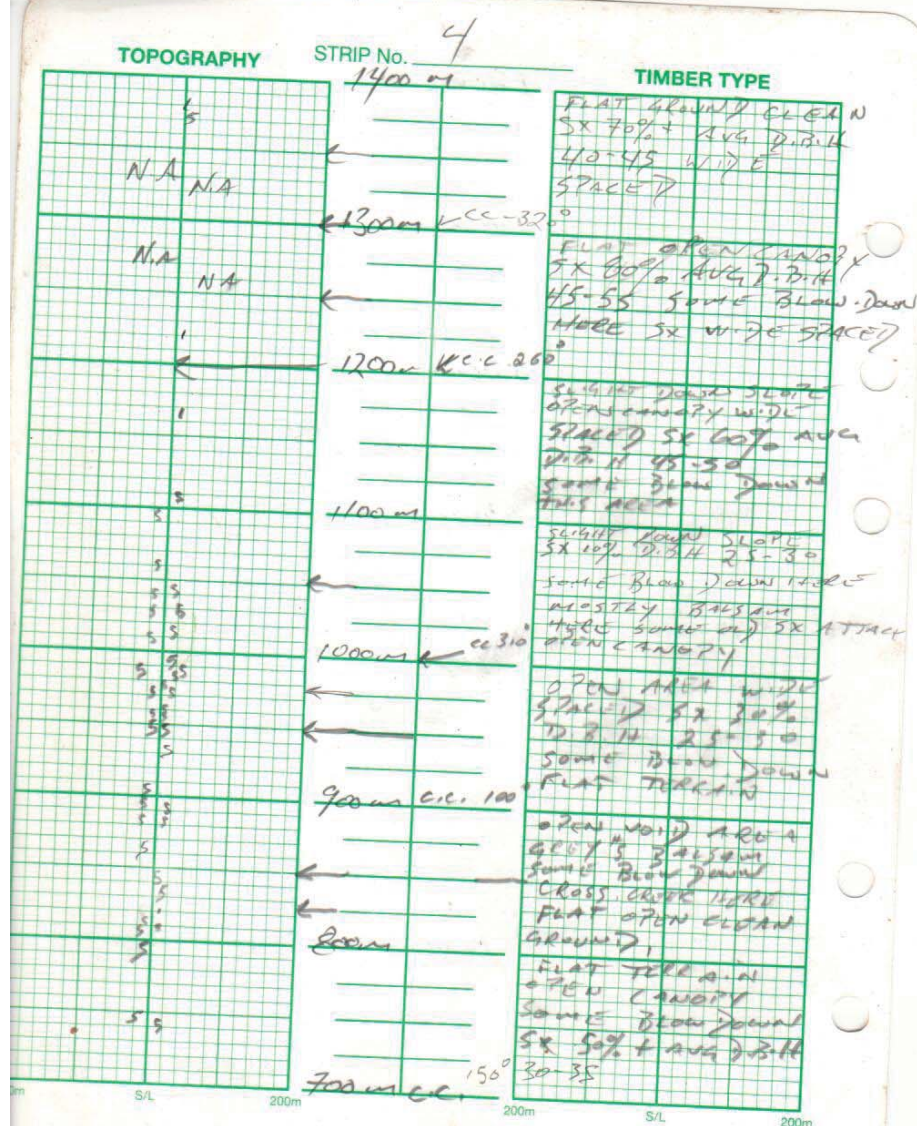
START STRIP: 0-m

JOB NO: GAF 014 DATE: OCT/13/15

CREW: DON & DAVE

REMARKS:

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STRIP NO: 4 DIRECTION: 150°

START STRIP: 700m

JOB NO: GAF 014 DATE: OCT/13/15

CREW: DON & DAVE

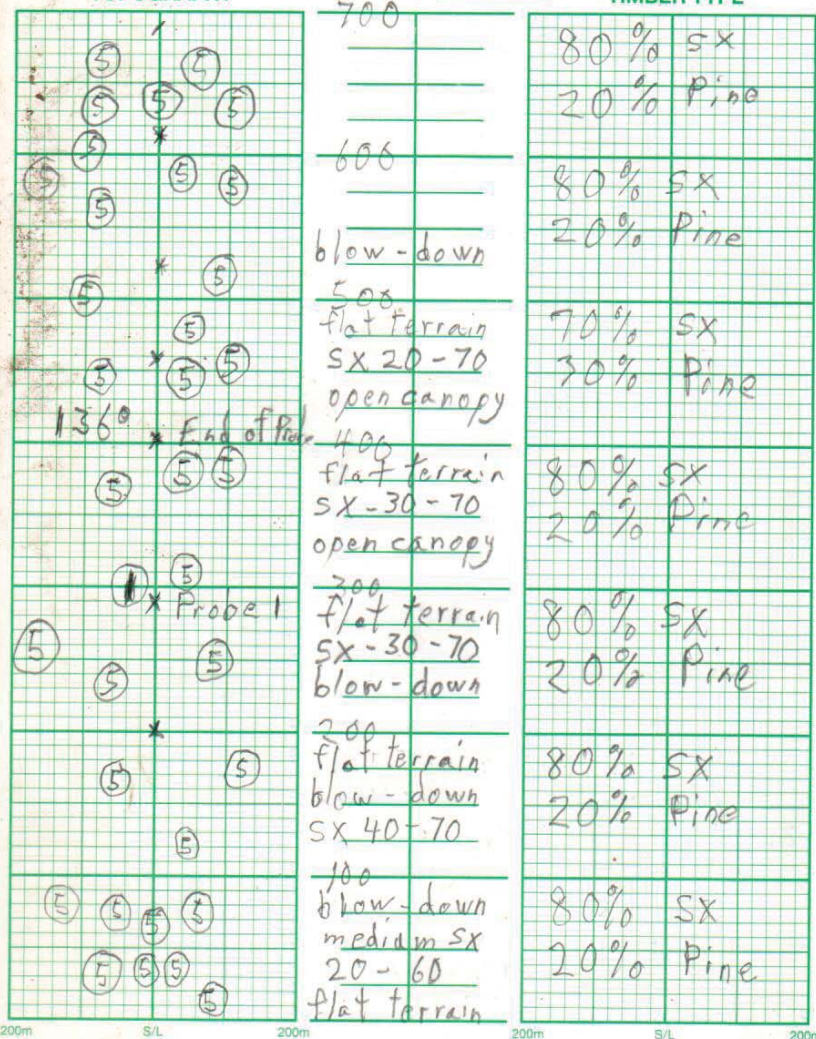
REMARKS:

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TOPOGRAPHY

STRIP No. GAF-014

TIMBER TYPE



STRIP NO.: 3

DIRECTION: 145°

START STRIP:

JOB NO.:

DATE: 15/10/13

CREW: Don & Dave

REMARKS:

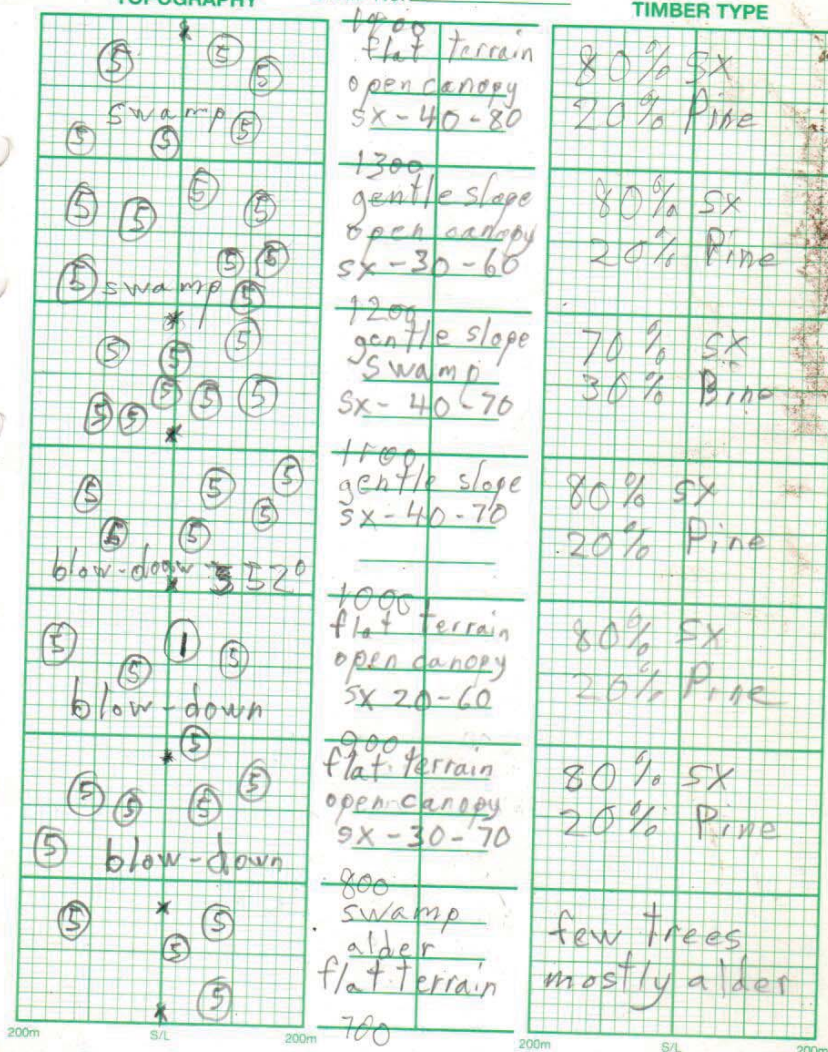


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Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No.

TIMBER TYPE



STRIP NO.: 3

DIRECTION: 136°

START STRIP:

JOB NO.:

DATE: 15/10/13

CREW: Don & Dave

REMARKS:



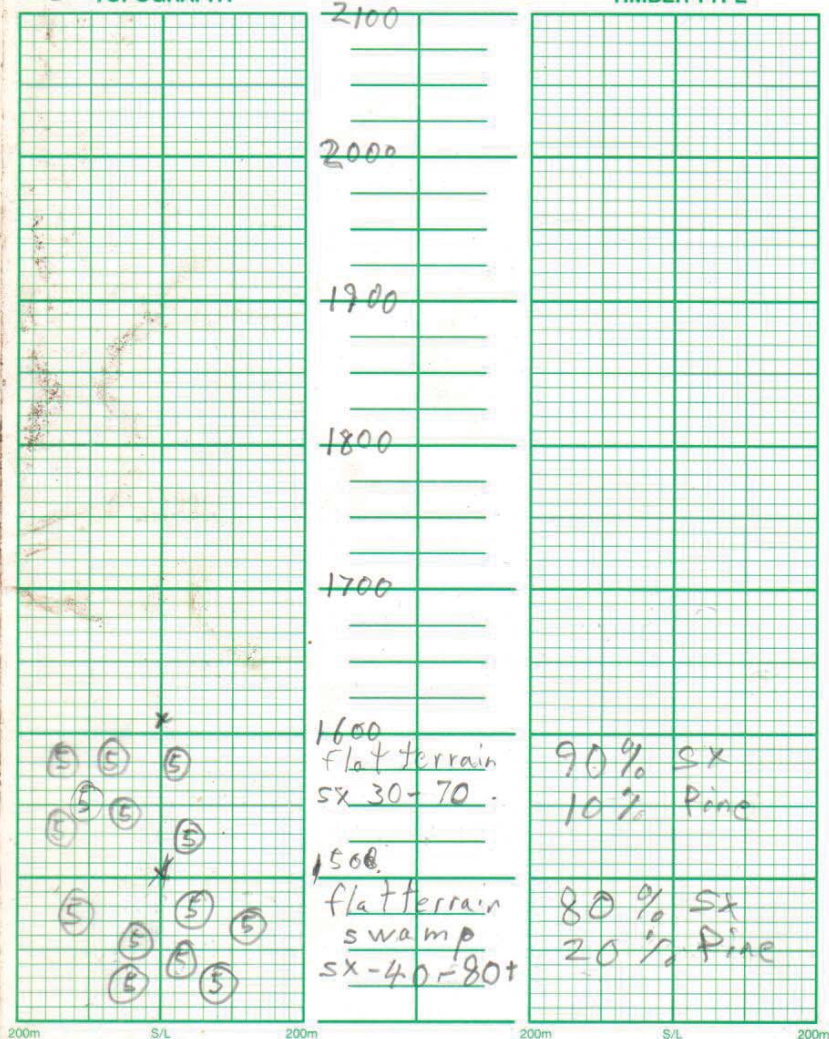
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16

TOPOGRAPHY

STRIP No. GAF-014

TIMBER TYPE



STRIP NO.:

3

DIRECTION:

352°

START STRIP:

JOB NO.:

DATE: _____

15/10/13

CREW:

Don & Dave

REMARKS:

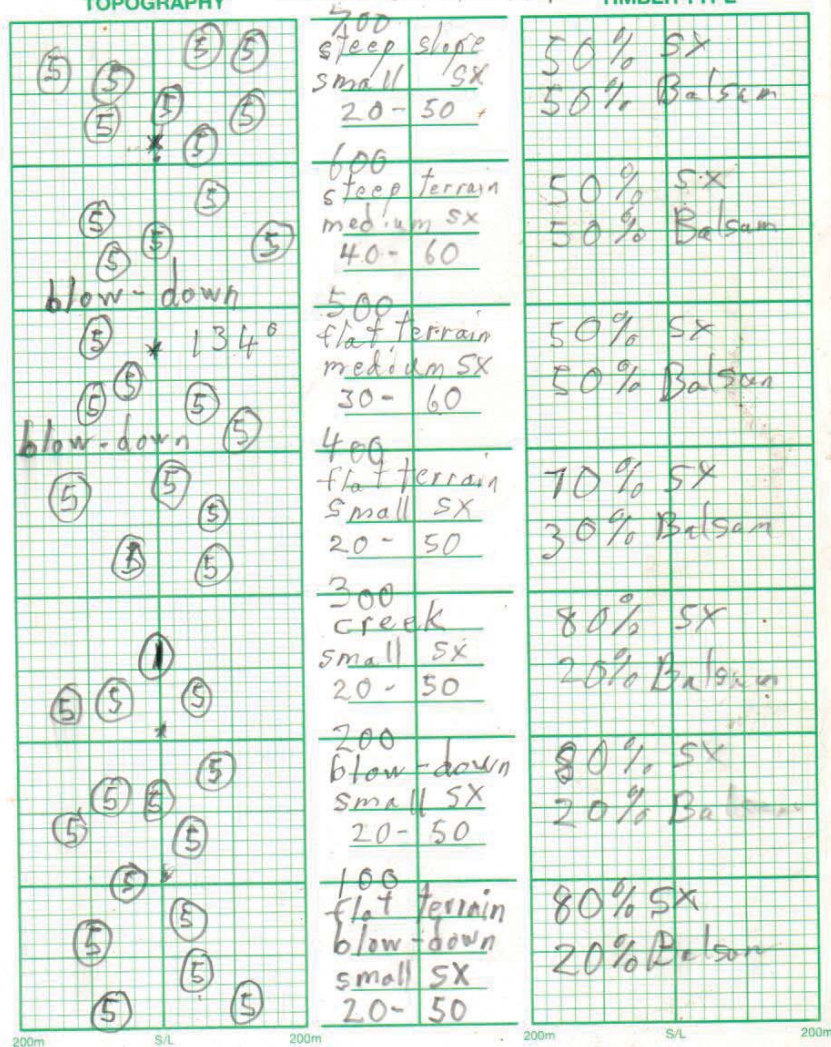


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TOPOGRAPHY

STRIP No. GAF-014

TIMBER TYPE



STRIP NO.:

1

DIRECTION

340

START STRIP:

JOB NO.:

DATE _____

15/10/12

CREW:

Doh & Dave

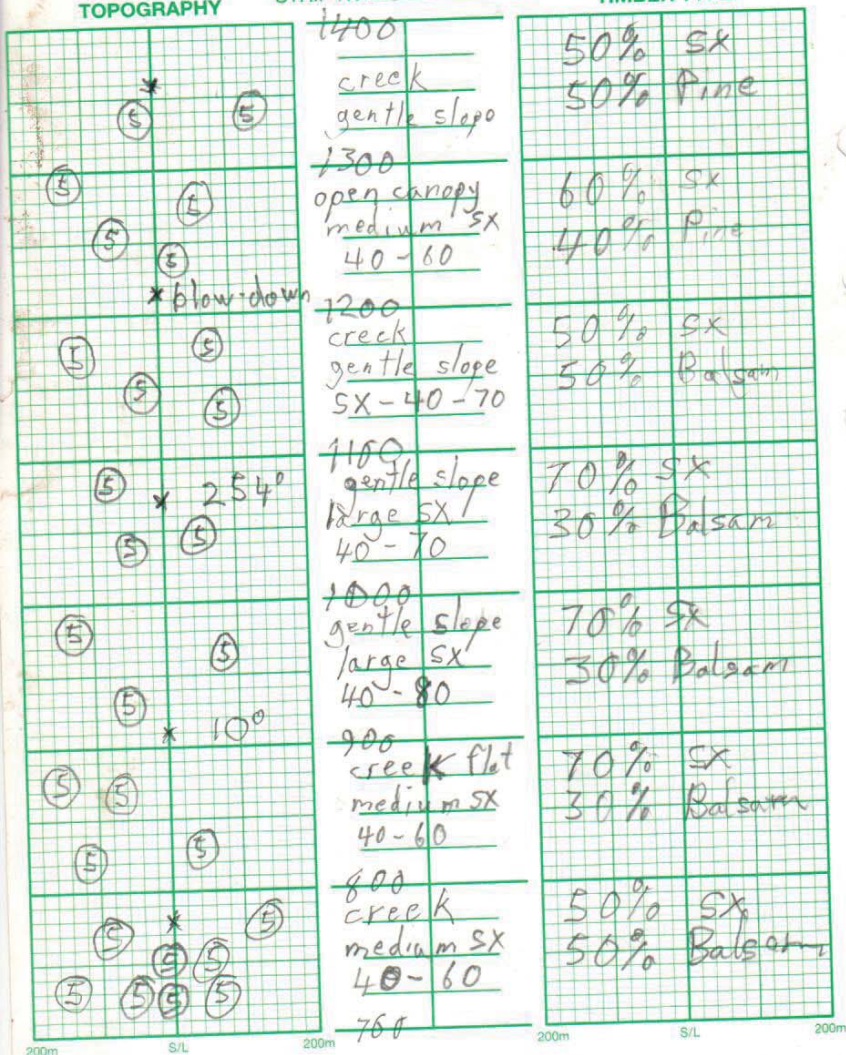


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TOPOGRAPHY

STRIP No. GAF-014

TIMBER TYPE

STRIP NO.: 1DIRECTION: 80°

START STRIP: _____

JOB NO.: _____

DATE: 15/10/12CREW: Don & Dave

REMARKS: _____

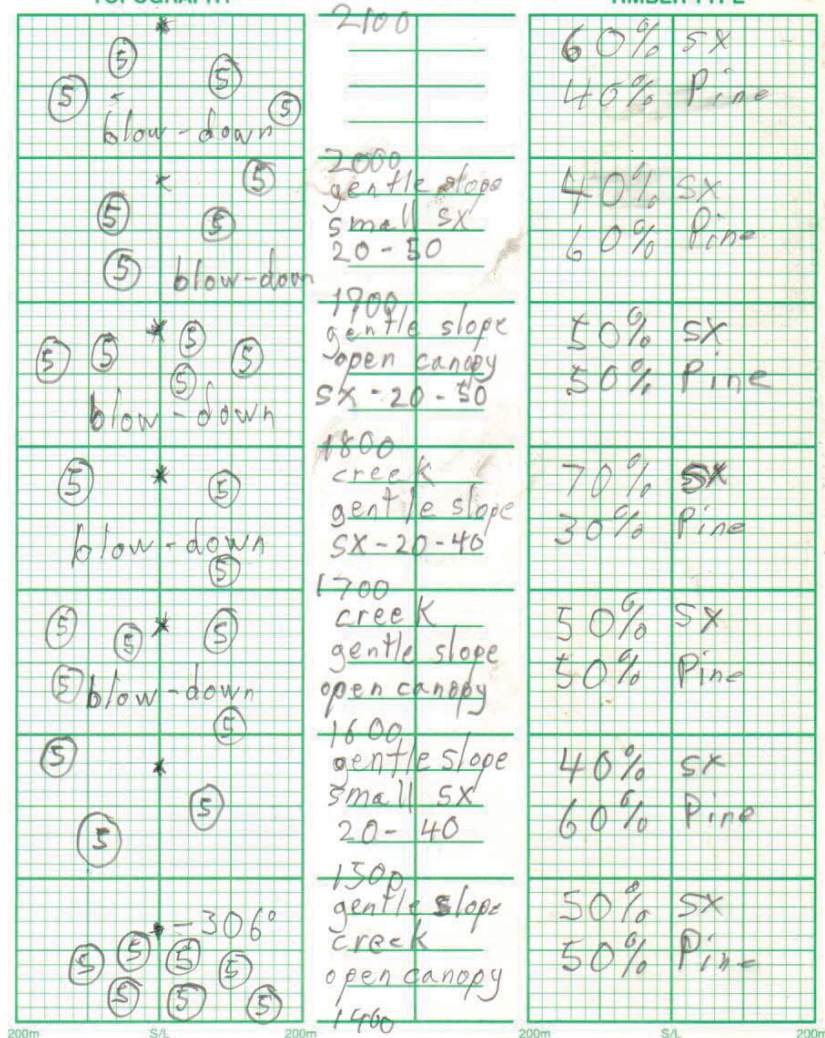


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TOPOGRAPHY

STRIP No. GAF-014

TIMBER TYPE

STRIP NO.: 1DIRECTION: 254°

START STRIP: _____

JOB NO.: _____

DATE: 15/10/12CREW: Don & Dave

REMARKS: _____



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TOPOGRAPHY

STRIP No.

5

TIMBER TYPE

The image shows three sheets of graph paper with handwritten notes and diagrams. The left sheet has a vertical profile with labels 'S', 'S/L', and '200m'. The middle sheet has horizontal lines. The right sheet has a cross-section diagram labeled 'CROSS CREEK' and 'FLAT GROUND'.

Left Sheet:

- Vertical axis labels: S, S/L, 200m
- Horizontal axis labels: 200m, S/L, 200m
- Diagram: A vertical line with an arrow pointing up and down, labeled 'PROBE 3' and 'C.C. 250'.

Middle Sheet:

- Horizontal axis labels: 200m, S/L, 200m

Right Sheet:

- Diagram: A cross-section of a creek bed, labeled 'CROSS CREEK'.
- Text: 'FLAT GROUND', 'NO FLOW DOWN', 'SMALLER EX 60%', 'AVG D.B.H. 25-35', 'CLOSE CANOPY'.
- Horizontal axis labels: 200m, S/L, 200m

STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

DATE:

OCT 15 / 15

CREW:

REMARKS:



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