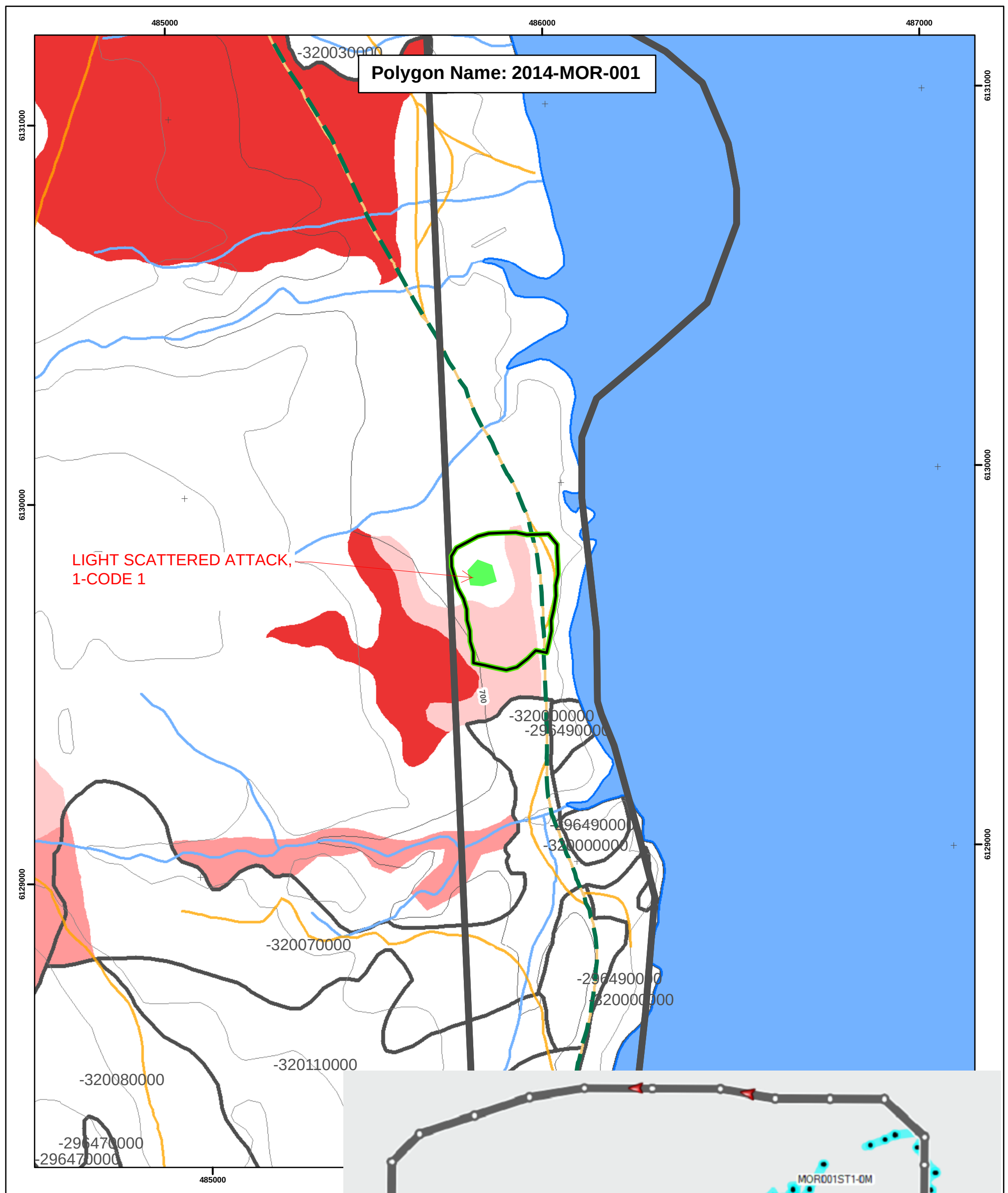
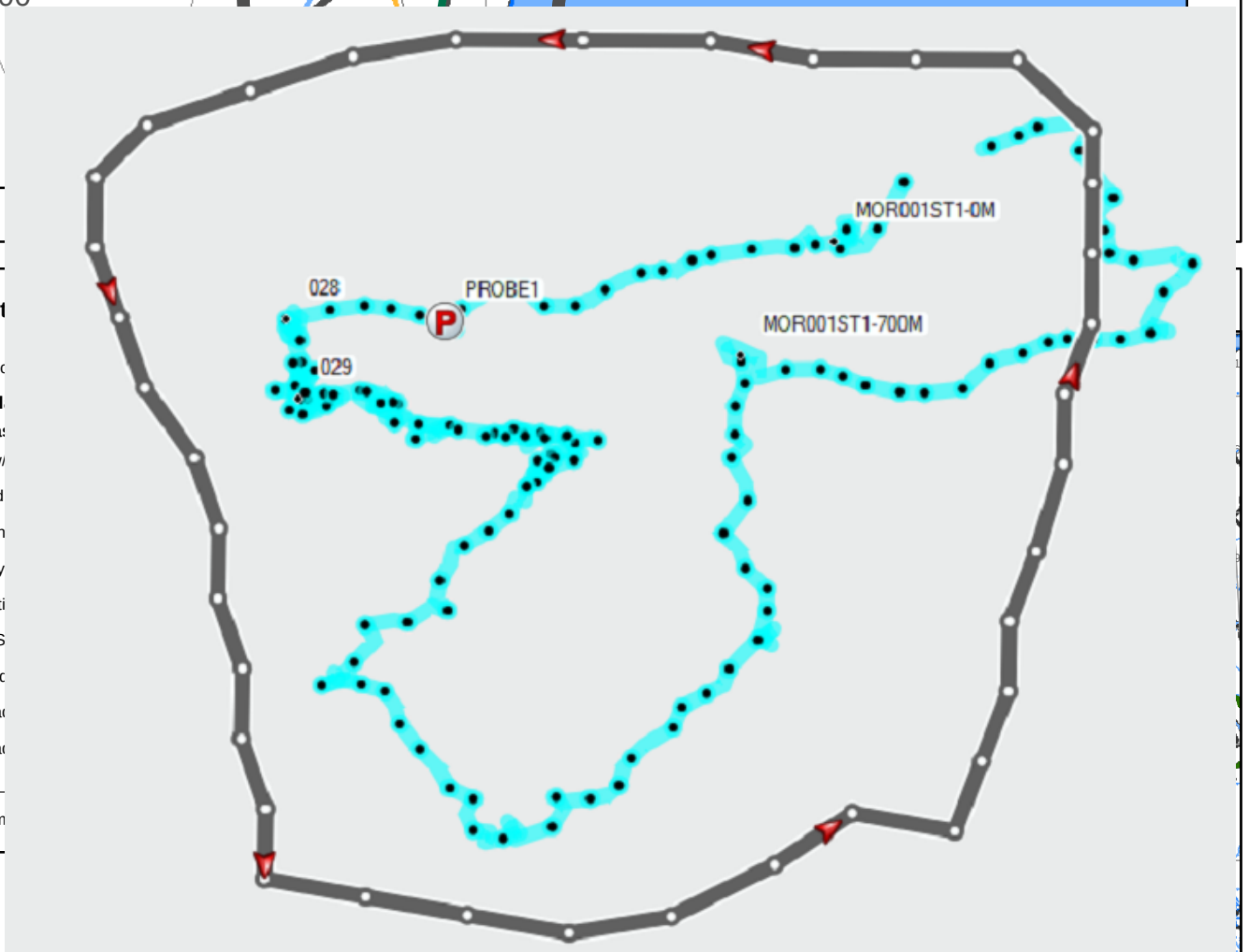




|                                                                                    |                                                                  |
|------------------------------------------------------------------------------------|------------------------------------------------------------------|
|  | Ministry of<br>Forests, Lands and<br>Natural Resource Operations |
| <h1>Spruce Bark Beetle<br/>Field Map</h1>                                          |                                                                  |
| <b>Polygon Name: 2014-MOR-001</b>                                                  |                                                                  |
| Landscape                                                                          |                                                                  |
| Unit/BMU:                                                                          | Morfee                                                           |
| Region:                                                                            | Omineca                                                          |
| District:                                                                          | Mackenzie                                                        |
| Mapsheet:                                                                          | 093O06                                                           |
| Hectares:                                                                          | 8.1                                                              |
| Scale:                                                                             | 1:10,000                                                         |
| When plotted on 11x17                                                              |                                                                  |
| Coordinate<br>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

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**SPRUCE BARK BEETLE REPORT  
FH16DMK010**

POLYGON: MOR-001

HECTARES:

8.1

WALKTHROUGH DISTANCE:

900

ESTIMATED INFESTED PIXELS FROM

WALKTHROUGH (Code 1-4)

1

11.1%

**SUMMARY OF CURRENT INFESTATION**

Walkthrough found 1 code 1 tree on a 1 and 2 year cycle, Very light Scattered attack, stand makeup is 40% spruce 60% Balsam, with Spruce average DBH 30-35cm.

VERY LIGHT SCATTERED ATTACK

**ACCESS**

Access is to the East of the Polygon and located on the Finlay FSR, approx 35km

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

Small polygon, flat with approx 40% spruce, 60% balsam and some birch mixed in. Located along Finlay mainline, bordered very close to Williston Lake

**SIZE, BOUNDARY and PATTERN OF INFESTATION**

Small 8 hectare Polygon, only 1 Code 1 noted on a 1 and 2 year cycle. Very light scattered attack

**INCIDENCE AND SEVERITY OF ATTACK**

1 probe line established incorporating 1 attacked tree. Tree attacked showing 1 and 2 year life cycle for beetle

**RISK OF BEETLE SPREAD**

Polygon has low risk of spread, monitor

**ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES**

Good access along mainline, flat.

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

With very low risk and very light scattered attack, monitor stand as right along mainline.

**OPTION 2****NO ACTION**

# 2014-MOR-001

SPRUCE BEETLE WALKTHROUGH

## Legend

-  LIGHT SCATTERED ATTACK (1-C1)
-  POLYGON OUTLINE
-  PROBE1
-  Path



Google earth

© 2015 Google  
Image © 2015 DigitalGlobe



300 m

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                 | 9.9                     | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 16.5               |
| 25.1-30.0      | 5.3                 | 31.8                    | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 53                 |
| 30.1-35.0      | 7.1                 | 35.5                    | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 85.2               |
| 35.1-40.0      | 9.4                 | 9.4                     | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 75.2               |
| 40.1-45.0      | 11.6                | 11.6                    | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 23.2               |
| 45.1-50.0      | 13.8                | 41.4                    | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 27.6               |
| 50.1-55.0      | 16.2                | 0                       | 16.2                               | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 16.2               |
| 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         | 155.8               | 139.6                   | 16.2                               | 0   | 0.0  | 0.0 | 0.0  | 0   | 296.9              |

| TABLE 4- Spruce Beetle Attack Density and Larval Density Rating |                               |                                                              |                                    |
|-----------------------------------------------------------------|-------------------------------|--------------------------------------------------------------|------------------------------------|
| MEAN NO. OF<br>ENTRANCE HOLES<br>PER 225 cm2<br>PHLOEM SAMPLE   | < 1 LOW Attack Density        | MEAN NO. OF<br>LIVING LARVAE<br>PER 225 cm2<br>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   |
| 2.00                                                            | < 3.9 SEVERE Attack Density   | 4.50                                                         | >24.9 EXTREME Mean Larval Density  |

| TABLE 2- Spruce Beetle Management Options after Walkthrough |       |    |                                                |         |                                         |       |
|-------------------------------------------------------------|-------|----|------------------------------------------------|---------|-----------------------------------------|-------|
| % 2015 ATTACK                                               | 10.4% | ## | SANITATION AND SALVAGE HARVEST PRIORITY RATING |         |                                         |       |
| % 2014 ATTACK                                               | 0.0%  | ## | LIGHT                                          | 0-599   | LEAVE (Monitor, Trap Trees, Baits, etc) | 357.9 |
| % 2013 ATTACK                                               | 0.0%  | ## | MODERATE                                       | 600-999 | PROBE (To Obtain Further Info)          |       |
| % HOST IN STAND                                             | 34.4% | ## | HEAVY                                          | 1000+   | RECOMMEND CRUISING/ LOGGING             |       |

---

|                                |                    |   |
|--------------------------------|--------------------|---|
| SUMMARY OF ALL CARDS<br>FS1111 | NUMBER OF<br>CARDS | 1 |
|--------------------------------|--------------------|---|

|                    |                                                                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACCESS -           | Access is to the East of the Polygon and located on the Finlay FSR, approx 35km                                                                        |
| POLYGON FEATURES - | Small polygon, flat with approx 40% spruce, 60% balsam and some birch mixed in. Located along Finlay mainline, boundaried very close to Williston Lake |

| 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                 | 3                       | 0                                  | 0 | 0    | 0 | 0    | 0 | 5                  | 0  |
| 25.1-30.0      | 5.3                 | 6                       | 0                                  | 0 | 0    | 0 | 0    | 0 | 10                 | 0  |
| 30.1-35.0      | 7.1                 | 5                       | 0                                  | 0 | 0    | 0 | 0    | 0 | 12                 | 0  |
| 35.1-40.0      | 9.4                 | 1                       | 0                                  | 0 | 0    | 0 | 0    | 0 | 8                  | 0  |
| 40.1-45.0      | 11.6                | 1                       | 0                                  | 0 | 0    | 0 | 0    | 0 | 2                  | 0  |
| 45.1-50.0      | 13.8                | 3                       | 0                                  | 0 | 0    | 0 | 0    | 0 | 2                  | 0  |
| 50.1-55.0      | 16.2                | 0                       | 1                                  | 0 | 0    | 0 | 0    | 0 | 1                  | 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         |                     | 19                      | 1                                  | 0 | 0    | 0 | 0    | 0 | 40                 | 0  |

[illegible]

| SIZE, BOUNDARY AND PATTERN OF THE INFESTATION |     |
|-----------------------------------------------|-----|
| 1                                             | 1   |
| 2                                             | 2   |
| 3                                             | 3   |
| 4                                             | 4   |
| 5                                             | 5   |
| 6                                             | 6   |
| 7                                             | 7   |
| 8                                             | 8   |
| 9                                             | 9   |
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| 96                                            | 96  |
| 97                                            | 97  |
| 98                                            | 98  |
| 99                                            | 99  |
| 100                                           | 100 |

Small 8 hectare Polygon, only 1 Code 1 noted on a 1 and 2 year cycle. Very light scattered attack

#### INCIDENCE AND SEVERITY OF THE INFESTATION

INCIDENCE AND SEVERITY OF THE INFESTATION

1 probe line established incorporating 1 attacked tree. Tree attacked showing 1 and 2 year life cycle for beetle

## RISK OF BEETLE SPREAD

Polygon has low risk of spread, monitoe

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Good access along mainline, flat.

MOR-001 Probel

SPRUCE BEETLE  
PROBE CARD

| LOCATION                                                                               |                     | PAGE 1 OF 1             |                                    |           |                   |                           |            |   |                    |
|----------------------------------------------------------------------------------------|---------------------|-------------------------|------------------------------------|-----------|-------------------|---------------------------|------------|---|--------------------|
| BEARING 106°                                                                           |                     | 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                 | ///                     |                                    |           |                   |                           |            |   | 1000               |
| 25.1 - 30.0                                                                            | 5.3                 | ///                     |                                    |           |                   |                           |            |   | 1000               |
| 30.1 - 35.0                                                                            | 7.1                 | ///                     |                                    |           |                   |                           |            |   | 1000               |
| 35.1 - 40.0                                                                            | 9.4                 | 1                       |                                    |           |                   |                           |            |   | 1000               |
| 40.1 - 45.0                                                                            | 11.6                | 1                       |                                    |           |                   |                           |            |   | 10                 |
| 45.1 - 50.0                                                                            | 13.8                | ///                     |                                    |           |                   |                           |            |   | 10                 |
| 50.1 - 55.0                                                                            | 16.2                | 1                       |                                    |           |                   |                           |            |   | 1                  |
| 55.1 - 60.0                                                                            | 18.7                |                         |                                    |           |                   |                           |            |   |                    |
| 60.1 +                                                                                 | 25.3                |                         |                                    |           |                   |                           |            |   |                    |
| TOTALS                                                                                 |                     | 19                      | 1                                  | 0         | 0                 | 0                         | 0          | 0 | 38                 |
| BARK SAMPLES<br>15cm x 15cm                                                            | NO. ENTRANCE HOLES  | NO. PARENT ADULTS       | NO. LARVAE                         | NO. PUPAE | NO. CALLOW ADULTS | FRESH (GREEN) BLOWDOWN    |            |   |                    |
|                                                                                        |                     |                         |                                    |           |                   | Attacked                  | Unattacked |   |                    |
| N                                                                                      | 12                  | 0                       | 4                                  | 0         | 4                 |                           |            |   |                    |
| S                                                                                      | 10                  | 0                       | 5                                  | 0         | 3                 |                           |            |   |                    |
| COMMENTS<br>beetle found in one SX-48<br>many Birch - wide spaced SX<br>flat - terrain |                     |                         |                                    |           |                   |                           |            |   |                    |
| CREW NAMES<br>Don & Dave                                                               |                     |                         |                                    |           |                   | DATE<br>Y M D<br>15 10 30 |            |   |                    |

