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PO Box 1749
Halifax, Nova Scotia
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Halifax Regional Council
January 9, 2007

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:

A handwritten signature in black ink, appearing to read "Dan English", written over a horizontal line.

Dan English, Chief Administrative Officer

A handwritten signature in black ink, appearing to read "Wayne Anstey", written over a horizontal line.

Wayne Anstey, Deputy Chief Administrative Officer - Operations

DATE: December 5, 2006

SUBJECT: Brown Spruce Beetle Program Overview

ORIGIN:

November 25, 2006 - Staff was requested to prepare a report outlining the BSLB program and the potential impact of changes proposed by the Canadian Food Inspection Agency.

RECOMMENDATION:

It is recommended that:

- Council and Staff continue efforts to work with the CFIA and stakeholder groups to develop a plan for the Brown Spruce Long Horn Beetle that protects forests, the forest industry and public safety.

BACKGROUND:

The Insect

The Brown Spruce Long Horn Beetle (BSLB) was first identified in North America at Point Pleasant Park in 1999. The insect showed up in traps and bait logs set up by the Canadian Food Inspection Agency (CFIA) after the municipality and Point Pleasant Park Commission had repeated difficulty identifying the cause of the death of park trees over a fifteen year period. The CFIA concluded that the foreign pest was the cause and likely moved from European packing material at the container port next to the park. The insect, a native of Europe normally infests dead or dying European species of spruce trees. It is not considered a serious pest in its native range. Rearing experiments and field work indicated that the insect was not only infesting dead and dying spruce but also healthy red, black and white spruce native to North America. This meant that the insect had the potential to become a significant pest which could infest and kill valuable forest resources affecting their economic, ecological and aesthetic values.

Current Program

Under the authority of the Plant Protection Act, the CFIA is the federal agency responsible to work with other federal agencies, provinces, stakeholders and scientists to develop a strategy to address foreign pests. A taskforce was created in 2000 to develop that strategy. HRM is part of that taskforce. Key elements of the strategy were;

- Survey of infested areas to determine the extent of the insect.
- Scientific research into the habits and behaviour of the insect in this new setting.
- Removal, handling and disposal of infested trees.
- Implementation of a Ministerial quarantine zone and prohibition of movement orders to prevent infested wood from being moved to other areas hastening the spread of the insect. (See Map A)
- Use of the Prudence Principle when dealing with the unknown.

Under the Ministerial Order wood is not permitted to leave the prohibition of movement zone unless it is handled in precise ways to avoid spreading the insect. Measures include avoiding movement during times of the year when the insect is active, processing wood from within the zone in certified mills and inspections and certification of wood product from within the zone.

The intention was to certify mills inside and outside the zone to handle marketable timber and wood product. This was difficult as the certification process proved to be very involved and federal regulations required certified mills to assume liability for any spread of the insect from their mills. Few mills felt they could accept that responsibility. The one mill outside the zone that did become certified felt that they could only offer a small stumpage fee for timber within the zone owing to the extra efforts, risks and associated costs. There were large amounts of downed and standing wood available outside the zone which the industry could utilize without BSLB restrictions. This left standing timber and downed timber within the zone with no market leaving woodlot owners with valueless stands and no way to pay for hurricane cleanup.

HRM's Experience

While HRM does not market trees from its forested lands staff does have experience with compliance measures and associated costs in HRM parks during both the BSLB eradication program and during Hurricane Juan clean-up. To meet regulations, marketable timber was canted (milled square to remove the outer part of the log where insects would live). The cant (squared timber) was inspected for galleries by the CFIA. All other material from the tree (slabs, branches and needles had to be incinerated in a certified burner. Any unmarketable timber was chipped and sat for up to two years to ensure it was not brood material for the insect. After sitting, the wood chip was not of any value even as hog fuel and had to be given away to soil manufacturers within the zone for the price of hauling. The cost of clean-up was enormous. Mills were not always willing to take wood from within the zone so little return was realised on the wood. HRM did have the good fortune of being able to access federal funds through the BSLB eradication program and Disaster Relief Program to cover these costs.

Private Landowner Experience

Local private woodlot owners were only eligible to have infested trees removed from their properties at federal expense. No compensation was available to offset the extra costs of healthy trees within the zone getting to market. The bulk of standing timber and downed wood from Hurricane Juan and subsequent winter storms remain in place within the current zone.

The Province did work to create a program to clean-up some timber within the zone but there was very little monetary return to the woodlot owner. HRM did execute a pick-up of quarantined wood around rural homes in the fall of 2005 if the owner placed it by the side of the road. This program was intended to help protect homes from the spread of wild fire while still respecting municipal burning bylaws.

DISCUSSION:

Proposed Program Changes

Since 2000 the CFIA and its partners have conducted a program aimed at control and eradication of the beetle. In the past year, eighteen new infested trees have been identified outside of the current quarantine zone. This summer the CFIA met with its partners to announce planned changes to the program including;

- The federal agency will no longer be removing and disposing of infested trees, although property owners would be encouraged to do so.
- An expansion of the quarantine zone to the entirety of Halifax County with extensions into Hants and Colchester County.

- Focussing on finding ways to disrupt the life cycle of the BSLB through scientific research.

Forest Industry Concerns

The forest industry is concerned about the near and long term impact upon the forest industry by the insect and the proposed changes. Forestry is a billion dollar industry within Nova Scotia. Significant forest operations exist within the proposed expanded area. Many operators fear that the same issues experienced within the present zone will simply be extended to the much larger area. Healthy wood would become less or unmarketable because it is within the zone. The larger zone may become a brooding ground to sustain the infestation. The industry would like to examine the impact of wood movement as a means of spreading the insect given that the beetle is a very strong flyer and takes advantage of winds to spread on its own. The industry would also like to develop an approach that draws upon the known impacts of native bark beetles on the forests of Nova Scotia.

Potential Impact Upon HRM

The program changes will have an impact upon HRM. Staff have seen, that over time, the BSLB can kill off entire stands of softwood park trees. HRM has been dependent upon the CFIA to implement a control program in parks and on forested municipal lands. The federal agency has been carrying the cost of the BSLB program. This is likely to cease as financial participation by the federal government is not a requirement under the Plant Protection Act. HRM will likely have to develop and be responsible to implement its own control program, to be approved by the CFIA, if the insect is to be controlled within its properties.

Next Steps

All of the partners are committed to coming up with a strategy to mitigate the impact and, if possible, eradicate the BSLB.. The proposed changes are being reviewed by the stakeholders on the BSLB Committee. The CFIA will be hosting a meeting in January to discuss the program and stakeholder suggestions. HRM staff will continue to sit at the table to represent the municipality and the wishes of Regional Council.

Staff have prepared letters of concern based upon Council's discussion of November 28, 2006. These letters have been sent to the Minister of Agriculture and Agrifood, affected MLAs and MPs as well as the provincial Minister of Natural Resources.

BUDGET IMPLICATIONS

Until a program is developed it is difficult to estimate the budget implications to HRM. However, HRM does have direct experience in the costs of handling quarantined wood through the BSLB program and Hurricane Juan. As an example, the clean-up of Point Pleasant Park cost

2.3 million dollars. Staff calculate that just under half of that could be attributable to the restrictions imposed under the BSLB Ministerial Order. As the proposed changes develop Council will be apprised of any potential costs attributable to the municipality.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

Council could direct staff to withdraw from discussions, however, this would not be in the best interest of HRM and would eliminate the stakeholders committee as a means to advance Councils concerns.

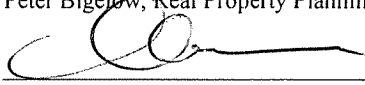
Council may also wish to make its own representation to appropriate political levels on this matter.

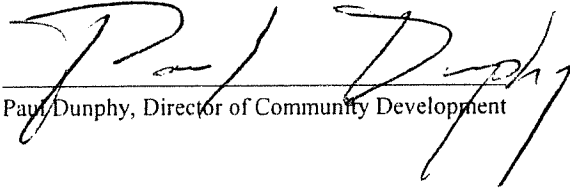
ATTACHMENTS

Map of Current Ministerial Order Zone
Question and Answer Sheet from the Canadian Food Inspection Agency
BSLB Information Sheet

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by : Peter Bigelow, Real Property Planning - 490-6047

Financial Approval by : 
Catherine Sanderson, Senior Manager, Financial Services, 490-1562

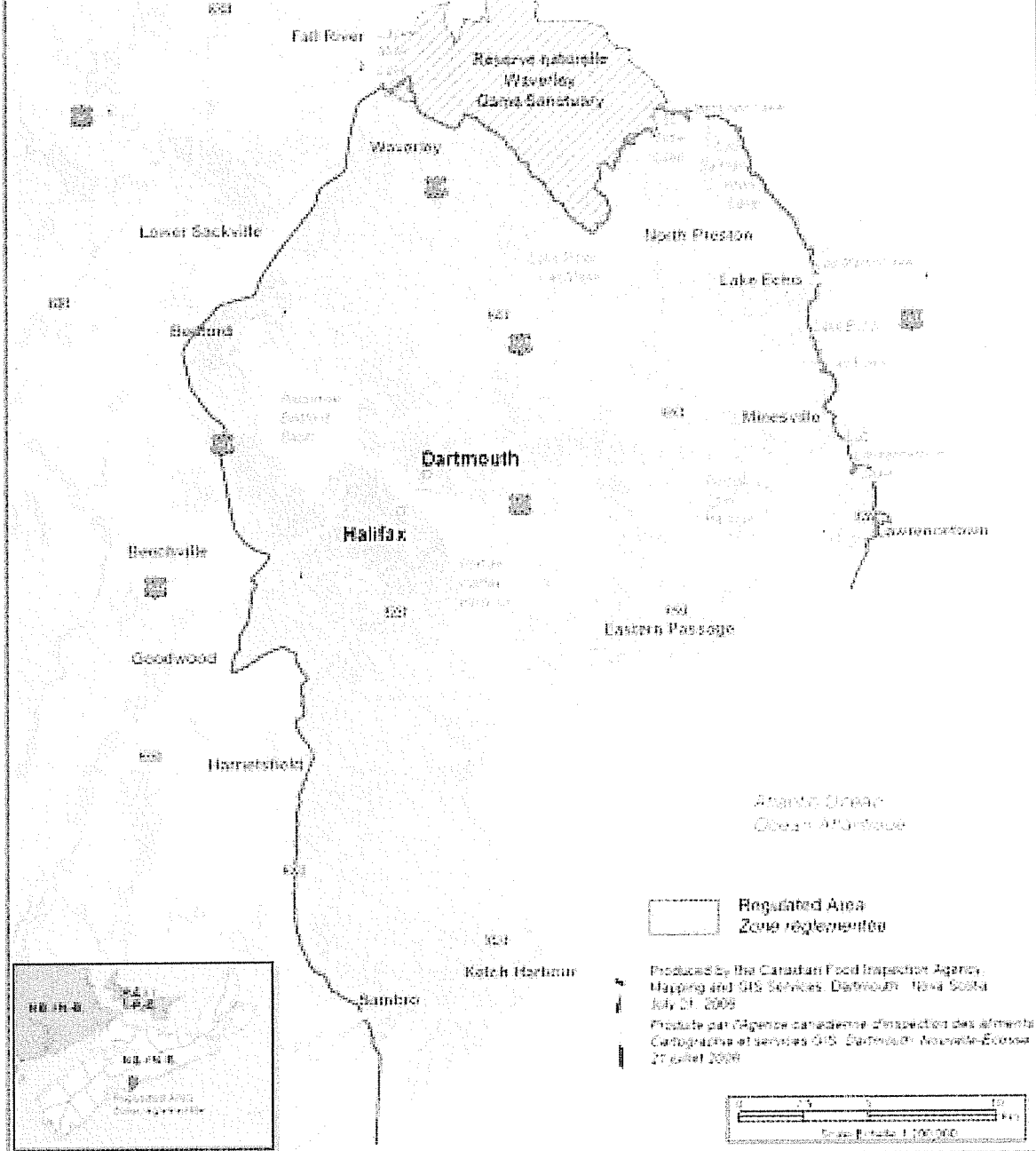
Report Approved by: 
Paul Dunphy, Director of Community Development



Canadian Food
Inspection Agency

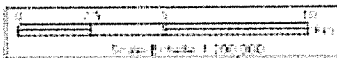
Agence canadienne
d'inspection des aliments

Area Regulated by Ministerial Order
for Brown Spruce Longhorn Beetle
Zone réglementée par l'ordonnance ministérielle
pour le longcorne brun de l'épinette



Regulated Area
Zone réglementée

Produced by the Canadian Food Inspection Agency,
Mapping and GIS Services, Dartmouth, Nova Scotia
July 21, 2009
Produit par l'Agence canadienne d'inspection des aliments
Cartographie et services GIS, Dartmouth, Nouvelle-Écosse
27 juillet 2009



<input checked="" type="checkbox"/> Canadian Food Inspection Agency				<input checked="" type="checkbox"/> Canada	
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Questions and Answers

Regulated Area in Nova Scotia for Brown Spruce Longhorn Beetle

Background

Q1 What is the Brown Spruce Longhorn Beetle (BSLB) and where is it found?

A1 The Brown Spruce Longhorn Beetle (BSLB) (*Tetropium fuscum*) (Fabricius) is an insect that belongs to the Cerambycidae family of beetles. It is a woodborer native to northern and central Europe and western Siberia where it typically attacks stressed or dying trees.

In 1999, BSLB was confirmed in Point Pleasant Park in the Halifax Regional Municipality (HRM) of Nova Scotia. To date, this is the only known location in North America where BSLB has been found.

Q2 How did the BSLB get to Canada and how long has it been here?

A2 Scientists believe that the pest was introduced to the area before 1990 through infested wood packaging materials brought from Europe through the port of Halifax. Point Pleasant Park is adjacent to the port of Halifax.

Q3 What does the BSLB look like?

A3 The adult beetle is 0.8 to 1.8 cm long; compound eyes completely divided into two parts; head and thorax are dark brown to black; body is slightly flattened, dark tan, brown, or reddish brown, with a lighter coloured band across the shoulder portion of the wing covers visible on some specimens.

BSLB can be distinguished from North American species of *Tetropium* by the presence of coarse sculpturing, with tiny, tooth-like projections on the surface of the upper thorax. Its antennae are red-brown and about one-third to one-half the body length. Its legs are brown in color.

Q4 What is the BSLB's life cycle and what does each stage look like?

The BSLB life-cycle consists of four stages:

1 - Egg

The eggs are 1 mm long, oblong and white with a tinge of green. They are usually laid singly or in pairs, and are well concealed and securely attached under bark scales.

2 - Larva

A4 The larva is yellow-white, about 8.5 - 22 mm long, and slightly flattened, and the head is reddish brown and the visible portion is 1 - 2 mm wide. It feeds initially in the inner, living bark and later scores the sapwood. At maturity the larva excavates a shallow, oval-shaped pupation chamber in the sapwood or inner bark.

3 - Pupa

The pupa is white, about 17 mm long by 3.8 mm wide. The larva pupates in the spring after a period of winter dormancy.

4 - Adult

Adult emergence begins in the spring and continues over a 6-8 week period. Males and females are sexually mature upon emergence and the female has a full complement of eggs (average 80). Mating and host selection begins almost immediately.

Q5 What type of spruce trees does the BSLB prefer?

A5 The BSLB is known to attack healthy spruce trees, dying trees and recently felled trees (e.g. windfall). Other environmental conditions, including drought and the presence of other insect species, may increase the susceptibility of trees to BSLB attack. Although any spruce tree 10 centimetres or more in diameter may be attacked, mature spruce trees in excess of 30 cm in diameter at breast height tend to be a favourite target of BSLB.

Q6 What are the symptoms of attacked trees?

Symptoms may include:

- A6
- Scattered streams of unexplained resin along the trunk;
 - Beetle exit holes in the bark about 4mm across
 - Networks of feeding tunnels just under the bark, up to 6abbr title="millimetres">mm across, filled with sawdust-like material (frass);
 - Tunnels in the wood about 4cm deep and 6abbr title="millimetres">mm wide. These tunnels appear L-shaped when the wood is cut in cross section;
 - Coarse sawdust in and around tunnels or plugging the entrance/exit hole;
 - Infested trees may exhibit progressive yellowing, browning, and loss of needles from portions of the crown.

Q7 What effect does the BSLB have on spruce trees?

Spruce (*Picea* spp.) trees are the only known hosts of BSLB in North

A7 America. The beetle's larvae feed on the inner bark (phloem) along the entire stem, but the lower portions of the tree are the most heavily infested. Heavily infested trees can be killed by the BSLB over a period of a number of years.

Q8 How serious a threat is the BSLB?

A8 This pest has the potential to spread throughout the range of red, white, black and possibly other species of spruce. No hardwood tree species are known to be affected. There is a significant risk that the establishment and spread of the insect to the forest would allow it to attack and kill valuable forest resources, which would affect their economic and ecological value. Recreation and aesthetic values could be severely affected in urban, managed and natural forests if an outbreak occurs. Reduction in timber quality would also significantly devalue lumber.

BSLB Control Measures

Q9 Who has the responsibility for the regulatory control of BSLB?

A9 Under the authority of the *Plant Protection Act*, the CFIA is the agency responsible for preventing pests of quarantine significance from entering Canada. When pests of quarantine significance are introduced into Canada, consultation is undertaken with federal and provincial government departments, stakeholders, scientists and international experts to determine whether there is merit in trying to eradicate or contain the pest. The CFIA carefully considers this advice in reaching a science-based decision on the risk-management strategy for the pest.

In the case of Halifax, a multi-agency and multi-disciplinary task force was formed in the spring of 2000.

While the CFIA is the lead agency, the continued efforts and cooperation of its federal, provincial, municipal and industry partners are required to protect Canada's valuable resources.

Q10 What is a regulated area and how is it established?

A10 A regulated area is created to slow or prevent the spread of quarantine pests (including diseases) that could adversely affect plant life. Generally, restrictions or prohibitions are placed on areas or things where the pest is present or suspected to occur and where there is merit in trying to slow or prevent the spread of the pest. One way to establish a regulated area is through a Ministerial Order.

A regulated area allows the CFIA to establish and enforce risk-mitigative measures to prevent the movement of potentially infested wood items from areas where a quarantine pest has been found. This is necessary to slow the spread of the pest, to protect the health of Canada's trees and forests and to prevent economic losses to the nursery, forest products and tourism industries and municipalities.

Additionally, a Ministerial Order defining a regulated area officially identifies the region that is known to have a quarantine pest.

Q11 What is a Prohibition of Movement notice?

A11 When necessary, the CFIA issues a Prohibition of Movement notice to restrict or prohibit the movement of high-risk materials from properties that are confirmed or suspected to be infested with a quarantine pest. The purpose of these alternative tools is to slow the spread of the pest to and protect neighbouring areas.

If you have received one of these notices, you are prohibited from moving the regulated materials described in the Notice from the location described on the Notice without prior written permission from the CFIA.

Q12 What measures has the CFIA implemented to limit the spread of the BSLB?

A12 A Ministerial Order was issued in October 2000 (revised in July 2001) that established a portion of the HRM as a regulated area. Under this Order regulated materials can be moved within the regulated area, but cannot be moved out of the area without the prior written permission of the CFIA.

A12 When necessary, the CFIA has also issued Prohibition of Movement notices to property owners outside, and in some instances within the regulated area where BSLB-infested trees have been found in order to prevent the spread of the beetle from these locations. No regulated materials can be moved from these properties without the prior written permission of the CFIA.

Q13 How long will the regulated area in Nova Scotia remain in effect?

A13 The regulated area will remain in effect as long as this regulatory tool is required to prevent the spread of the BSLB to non-infested areas of Canada.

Q14 What materials are regulated under the Ministerial Order and Prohibition of Movement notices?

A14 Regulated materials include wood of all species, in the form of logs, trees, lumber, wood with bark attached, nursery stock, wood mulch, wood or bark chips, and firewood.

Q15 What is a Movement Certificate?

A15 A Movement Certificate is issued by the CFIA to allow movement of regulated materials under specific conditions that facilitate the transport of these materials while minimizing the potential dispersal of the BSLB. Contact the CFIA BSLB office at 1 877 868-0662 or (902) 426-4667 for more information or to obtain a Movement Certificate.

Q16 Can wood processing companies outside the regulated area harvest regulated materials from within the regulated area?

A16 Yes. The CFIA has developed industry Compliance Agreements that outline mandatory phytosanitary movement controls to prevent the spread of the BSLB and allow for the harvesting and transport of forest products out of regulated areas.

Q17 Will the CFIA continue to remove trees in generally infested areas?

A17 No. Unless it is for research purposes, no further tree removals are currently planned in the regulated area, which is considered to be generally infested. The removal of infested host trees is no longer considered to be an effective management tool for the BSLB in areas considered to be generally infested. Emphasis will be on continued research, surveillance, effective communications and enforcement activities in the regulated area.

Q18 Will the CFIA continue to remove infested trees found outside the regulated area?

A18 Tree removals in conjunction with other control options (such as Prohibition of Movement notices) may be employed in areas not generally infested with the BSLB and in support of research activities.

Q19 Should landowners contact the CFIA if they suspect their trees are infested with BSLB?

A19 Yes. Landowners who see signs of infestation on their spruce or conifer trees should contact the CFIA at 1-877-868-0622 or 902-426-4667.

Q20 How is the CFIA increasing public awareness of the requirements of the Ministerial Orders?

The Agency has been increasing public awareness of the BSLB and the requirements of the *Ministerial Orders* by:

- publicizing the regulations on the movement of regulated materials in newspapers and on the radio;
- actively seeking opportunities to present information or speak on the BSLB;
- A20 • holding public meetings;
- keeping the public, stakeholders and affected industries up to date through regular meetings and on the CFIA website;
- distributing posters and other printed materials to the public, to impacted areas and to affected industries
- taking effective enforcement actions when warranted
- Continued cooperation from the public is essential if we are to control this pest

Impacts of Hurricane Juan

Q21 What impact has Hurricane Juan had on the BSLB eradication efforts in the HRM?

Hurricane Juan reached Halifax and the surrounding area on September 29, 2003. It mainly affected the central corridor of mainland Nova Scotia

from Halifax through to the town of Truro and beyond to Prince-Edward-Island. Millions of spruce trees were toppled, uprooted and devastated, leaving them stressed and vulnerable.

A21 In December 2003, the Canadian Forest Service (CFS) issued a report that warned of the potential increase in BSLB populations as a result of stressed trees and windfall from Hurricane Juan. In February 2005, the CFS confirmed the presence of breeding BSLB in spruce windfall.

Q22 Is the CFIA cleaning up regulated materials in the regulated area that were affected by the hurricane?

No. The CFIA is not responsible for the clean-up of debris left by Hurricane Juan. However, the Agency assists in these efforts by working with landowners, industry and other partners to develop appropriate management solutions to allow clean-up in an acceptable manner. The CFIA will continue to review any additional measures brought forward to promote the harvesting of trees from the regulated area while preventing the spread of the BSLB.

What you can do to help protect Canada's trees and forests from the BSLB:

A22 Do not move regulated materials out of the regulated area or from properties under Prohibition of Movement notices without prior written permission from the CFIA.

If you live outside the regulated area, report signs of BSLB infestation to the CFIA.

Assist the CFIA by reporting all illegal movement of regulated materials.

Nova Scotia BSLB Office:

1-877-868-0622 or (902) 426-4667

Monday to Friday, 8:00 a.m. - 4:00 p.m.

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2006-08-14


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Tetropium fuscum (Fabricius) - Brown Spruce Longhorn Beetle

BACKGROUND:

In March, 1999, the brown spruce longhorn beetle (BSLB), *Tetropium fuscum* was found in dying red spruce trees in Point Pleasant Park, Halifax, Nova Scotia. The following summer, the Canadian Forest Service (CFS) reared over 40 *T. fuscum* adults from red spruce bolts collected in the park. Subsequent investigations by the CFS concluded that *T. fuscum* was also attacking apparently healthy trees. Specimens collected in the park in 1990, originally identified as a related native species (*Tetropium cinnamopterum*) have also now been confirmed as *Tetropium fuscum*.

HOSTS:

Spruce (*Picea* spp.) trees are the main hosts of BSLB. On occasion, firs (*Abies* spp.), pines (*Pinus* spp.) and larches (*Larix* spp.) may be attacked.

DISTRIBUTION:

This insect is native to Europe, where it can be found from Scandinavia to Turkey. It is also known from Japan and western Siberia. The find in Nova Scotia is believed to be the first discovery in North America.

BIOLOGY:

In the spring, female beetles lay eggs in the bark of standing or recently felled trees. Eggs are usually laid singly, but sometimes in clusters of up to ten eggs. Larvae hatch 10 to 14 days later, and bore into the phloem to feed, producing a network of irregular tunnels packed with sawdust-like frass (excrement). After about two months, the larvae are 1.5 to 2.5 cm long. They bore into the sapwood perpendicular to the trunk, for about 2-4 cm. They then turn and tunnel parallel to the trunk for another 3-4 cm. This forms a characteristic L-shaped tunnel, where the larva changes to a pupa. The adults emerge in about 14 days,

chewing a round or oval exit hole in the bark about 4-6 mm in diameter. The adults live approximately three weeks and can be found from June to August. Both males and females are strong flyers. Larvae overwinter just under the bark in the phloem / cambium layers.

Over most of the range of spruce in Canada, the BSLB would likely have one generation per year (egg, larva, pupa, adult).

DETECTION & IDENTIFICATION:

Damage:

In its native range BSLB, is recognized mainly as a secondary forest insect, attacking trees that have already been subjected to other types of insect attack or environmental stresses. During a population outbreak, beetles can attack living, healthy trees. Outbreak levels have the potential to persist for a decade and continually cause damage over extensive tracts of vulnerable conifer forest. In Europe, *T. fuscum* often attacks stands of Norway spruce over 50 years of age. Tunnels in the wood as a result of larval feeding reduce timber quality.

Symptoms of attacked trees include:

- Streams of resin scattered along the trunk (Figures 3 & 4)
- Holes in the bark about 4 mm across
- Networks of feeding tunnels just under the bark, up to 6 mm across, filled with sawdust-like material
- Tunnels in the wood about 4 cm deep and 6 mm wide. These tunnels appear L-shaped when the wood is cut longitudinally.
- Coarse sawdust may be found in and around tunnels or plugging the entrance/exit hole

Identification:

- Adult (Figures 1 & 2): Flattened body, 1 to 1.5 cm long. Head and neck area dark brown to black. The elytra (wing covers) can be tan, brown or reddish brown and have 2 to 3 longitudinal stripes. The antennae are reddish brown and about half of the body length. The legs are dark brown.
- Egg: one mm long, oblong and white with a tinge of green.
- Larva: Yellow-white, about 14 to 28 mm long, and slightly flattened. The head is reddish brown and about 3 mm wide.
- Pupa: White, 10 to 17 mm long and 3.8 mm wide.

Click on image for larger view

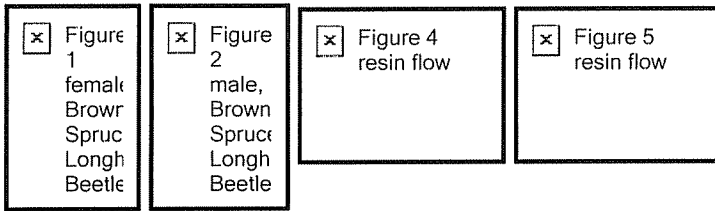


Fig. 1.
Female

Fig. 2.
Male

Fig. 3.
Resin flow

Fig. 4.
Resin flow

Other Links

- [Natural Resources of Canada, The Canadian Forest Service](#)
- [Nova Scotia Department of Natural Resources](#)

Text: Plant Health Survey Unit.

Photos : Natural Resources of Canada, Canadian Forest Service

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