



# **Emerald Ash Borer in Toronto**

Managing Public and Private Ash Trees

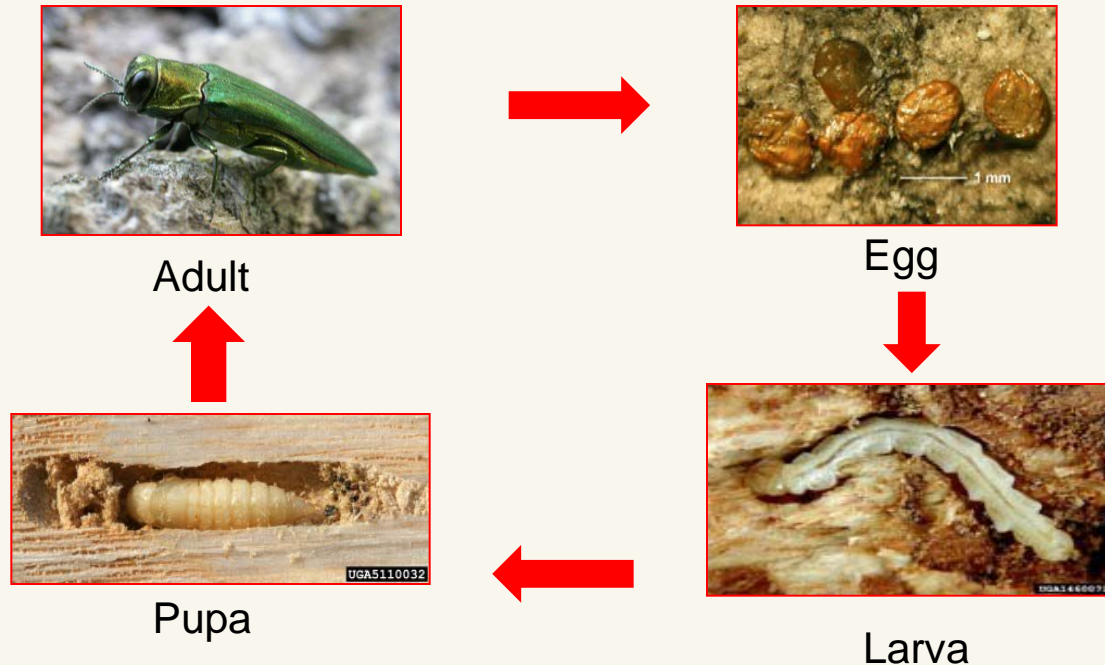
# Emerald Ash Borer (EAB)



- EAB is an introduced insect pest from Asia.
- EAB attacks and kills all species of true ash trees, (those trees within the genus *Fraxinus*, not mountain ash).
- EAB feeds beneath the bark and disrupts the flow of water and nutrients within trees.
- Tree mortality will occur if a tree is infested, and not treated with pesticide. It may take as little as one year, however death normally occurs within 2-3 years of infestation.



# 4 Life stages



**EAB has four life stages completed in one year:**

The adult beetles lay eggs in bark crevices from late May to August and the emerging larvae tunnel into the outer stem of the tree, feeding beneath the bark. Larvae feed throughout the summer destroying the tree's vascular system. Larvae over winter, pupate in the spring and finally emerge as adults between May and July.

# Signs and Symptoms



Unfortunately, early detection is very difficult. Many symptoms of EAB only become evident after two or more years of infestation. EAB symptoms include:

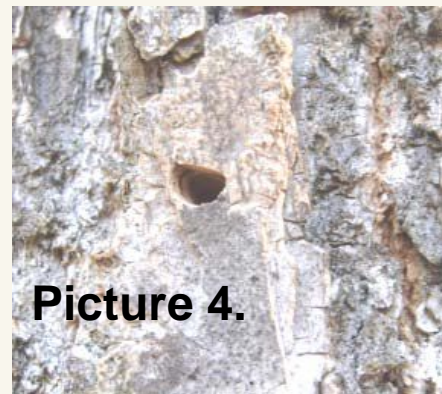
- **thinning crowns**, (as seen in picture1).
- **shoots or suckers from the main stem**
- **small D shaped holes made by the beetles**, (as seen in picture 4 and 5).
- **cracking bark and wood pecker damage**, (as seen in pictures 2 and 3).

\* Note: one or more of these may appear without the presence of EAB.



EAB infestation happens in 3 stages:

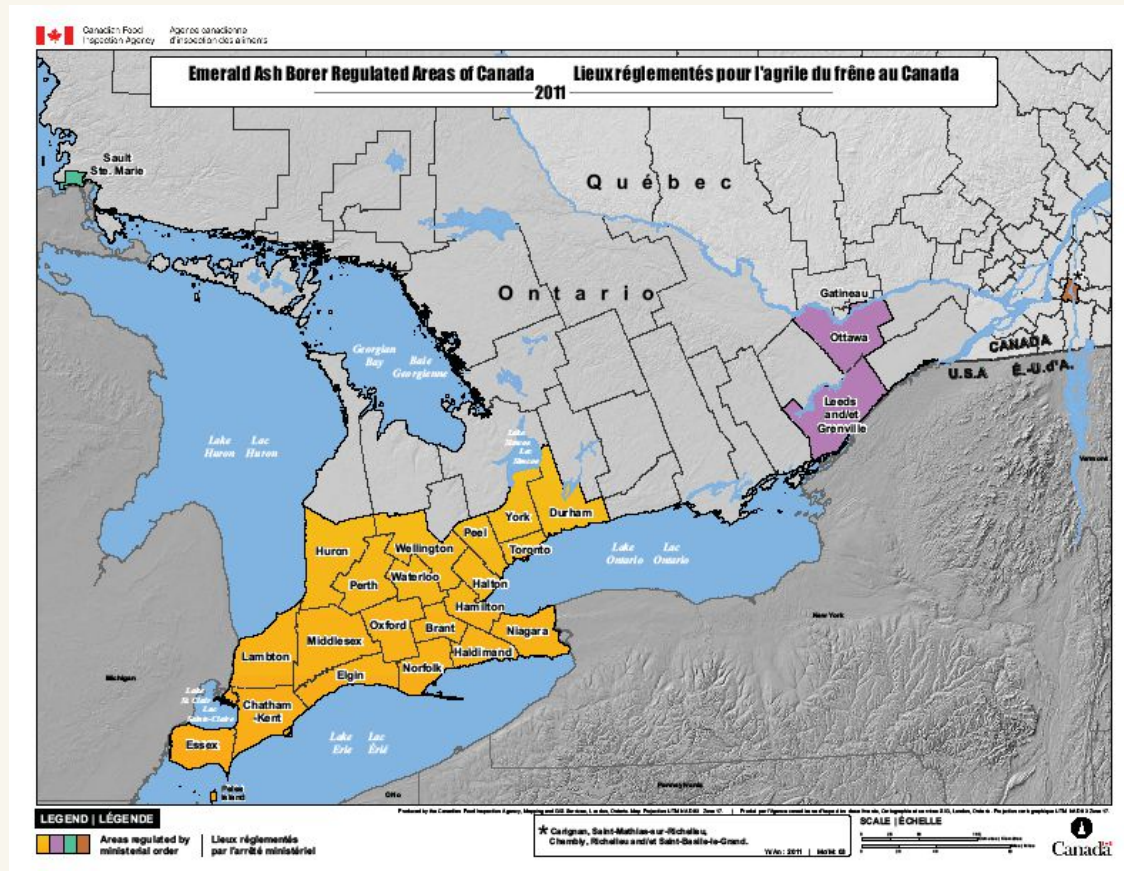
1. Beetles attack the tree.
2. Signs and symptoms become evident 2 to 3 years after insects arrive.
3. The tree starts to decline and dies within months of the appearance of signs and symptoms.



# EAB in Canada

Since the detection in Detroit and Windsor in 2002, EAB has spread and established throughout South-western Ontario and 15 states south of the border. Despite extensive control efforts in Canada and the U.S., millions of ash trees have been killed by EAB.

This map shows the EAB regulated areas of Canada. South-western Ontario, Ottawa, Leeds and Grenville Counties and smaller areas in Sault St. Marie and Quebec are assumed infested. Movement of ash material, including firewood, from these areas is restricted. Toronto is surrounded by EAB infestation.





# EAB in Toronto

As you can see from the map on the previous slide, Toronto is not alone in facing this devastating problem. In 2007 the Canadian Food Inspection Agency (CFIA) first confirmed the presence of EAB in Toronto, in the area of Sheppard Avenue and Highway 404. Systematic surveys looking at branch samples were conducted in 2009, 2010 and 2011. The sampling has confirmed EAB infestation throughout the east, north and west parts of the City. Urban Forestry is continuing to survey and will provide updates on new areas of infestation, (see the map link below which will be updated as new information is available).

Urban Forestry has begun to survey in west Toronto where infestation has more recently established. In the central core of the City, Urban Forestry has installed insect traps to detect early infestation. In 2012, Urban Forestry plans to also conduct surveys in the downtown core to more clearly identify newly infested areas.

Refer to this link for Urban Forestry's most current mapping of the infestation:

<http://www.toronto.ca/trees/pdfs/EABupdatemap.pdf>

# EAB in Toronto

- Once established, EAB has proven impossible to control.
- Infestations have increased elsewhere in North America despite significant attempts at control measures.
- The spread of EAB infestation and mortality in Toronto is expected to expand exponentially in the next six years.
- Death of most ash trees in Toronto is expected between 2015-2017. Areas with advanced infestation will lose most ash trees within 2012.
- All ash trees in Toronto are at risk. Urban Forestry estimates that 860,000 ash trees exist in the City, based on the recent canopy study: [http://www.toronto.ca/trees/every\\_tree\\_counts.htm](http://www.toronto.ca/trees/every_tree_counts.htm)



# Impact of EAB on Toronto's Urban Forest



The loss of trees will be particularly devastating in neighbourhoods with over 80% ash canopy.

Death and management of so many trees will have a significant cost. Additionally, we are losing a valuable native urban tree that is tolerant to difficult growing conditions and an integral player in the health of our rural and urban forests.



# Managing EAB in Toronto

Urban Forestry has developed a comprehensive Management plan including:

- detection surveys
- inventory
- removal of dead/dying trees
- pesticide treatment of selected trees
- replanting
- community engagement
- collaboration with regulatory and scientific organizations

Management of EAB has shifted from primarily a Forest Health Care focus to more of an operational and public education focus.



# Pesticide Treatment

A naturally-occurring compound from the neem tree, marketed as *TreeAzin*<sup>™</sup> is the only product registered in Canada proven to be effective in controlling EAB within ash trees.

This treatment is costly and needs to be done every two years for continued EAB control. It is also only effective for trees with low levels of infestation. In specific circumstances treatment of City trees is proposed by Urban Forestry. These trees are assessed on a case-by-case basis on City land. For more information, refer to our website, [www.toronto.ca/trees/eab.htm](http://www.toronto.ca/trees/eab.htm) or the policy, [www.toronto.ca/trees/pdfs/TreeAzinInjectionPolicy.pdf](http://www.toronto.ca/trees/pdfs/TreeAzinInjectionPolicy.pdf)





# Removal of City-owned Ash Trees

Urban Forestry plans to remove the dead trees in areas of high EAB mortality and will replace them, where space permits, as soon as possible.

Homeowners will be notified of tree removal and replacement planting by receiving a "Notice of Tree Removal and Replacement Planting" card, (shown on the right side).

There are many streets within the infestation area that have ash trees not yet showing signs of advanced decline. These trees are prioritized for removal next year. As the infestation progresses throughout Toronto, Urban Forestry Operational staff will follow with removals and replantings.

Urban Forestry is focusing efforts on the replacement of trees within areas of the City that are most vulnerable to ash tree losses. Replacement planting will happen as soon as possible, and where operationally possible will be planned for the spring or fall following tree removals.



Address: .....

**Dear Resident:**

Urban Forestry has determined that the ash trees in your neighbourhood are infested with the Emerald Ash Borer (EAB) insect. The declining City-owned ash tree(s) located on the City property adjacent to your home/property has been scheduled for removal. Plans for removal and replacement (space permitting) are outlined below.

**TREE REMOVAL**

Position No. (s): .....

☐ Winter 20..... ☐ Spring/Summer 20..... ☐ Fall 20.....

**TREE REPLACEMENT PLANTING**

☐ Fall 20..... ☐ Spring 20.....

**Recommended Species:** .....

**Alternate Species** (if above species not available): .....

**Recommended planting locations**

Position No.: .....

metres: ☐ north ☐ south ☐ east ☐ west  
from the: ☐ curb ☐ walkway ☐ driveway  
☐ laneway ☐ building

**and**

metres: ☐ north ☐ south ☐ east ☐ west  
from the: ☐ curb ☐ walkway ☐ driveway  
☐ laneway ☐ building

Position No.: .....

metres: ☐ north ☐ south ☐ east ☐ west  
from the: ☐ curb ☐ walkway ☐ driveway  
☐ laneway ☐ building

**and**

metres: ☐ north ☐ south ☐ east ☐ west  
from the: ☐ curb ☐ walkway ☐ driveway  
☐ laneway ☐ building

Inspected by: ..... Date: .....

**QUESTIONS**

For more information on Emerald Ash Borer and tree removal and replacement visit [toronto.ca/trees](http://toronto.ca/trees) or call 311.

# What to do if EAB Suspected

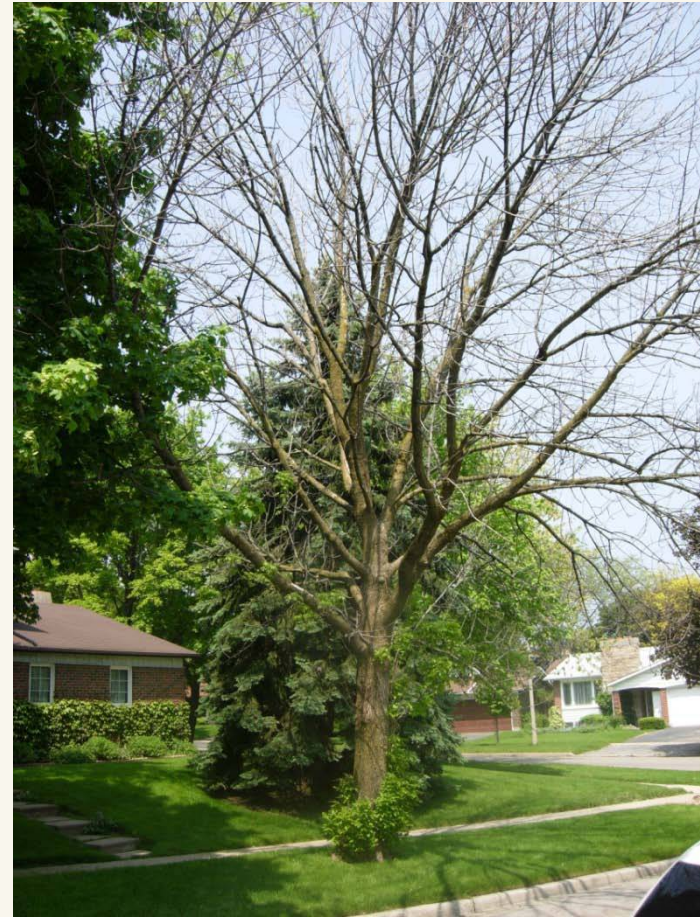
1. Determine if the tree is a City-owned or privately owned tree. Backyard trees are private, as are trees on front lawns outside the street right-of-way. If you are unsure of ownership, call 3-1-1. Trees that are on the boundary between City and private land are referred to as boundary line trees.

[www.toronto.ca/trees/pdfs/BoundaryLineTreePolicyForm.pdf](http://www.toronto.ca/trees/pdfs/BoundaryLineTreePolicyForm.pdf)

2. If the tree is City -owned and you suspect EAB infestation, contact 3-1-1 for an inspection or information on whether your tree is already scheduled for removal.
3. With approval of Urban Forestry inspectors, homeowners have the option of paying for pesticide treatment of a City tree at their own expense.

For either City-owned or private trees, homeowners who wish to pay for *TreeAzin*<sup>TM</sup> injections should refer to the website; [www.bioforest.ca](http://www.bioforest.ca) for a list of licensed contractors. For the policy for treating a City-owned tree see:

[www.toronto.ca/trees/pdfs/TreeAzinInjectionPolicy.pdf](http://www.toronto.ca/trees/pdfs/TreeAzinInjectionPolicy.pdf)





# For Private Boundary Line Trees



**Trees that are growing on the boundary between two private properties are the shared responsibility of those properties.**

- Property owners should try to come to an agreement on how to respond to an EAB infested tree that is growing on the boundary line.
- If you are unable to reach an agreement with your neighbour and want to determine your legal rights, you should contact a lawyer. The City has no jurisdiction with respect to these issues.

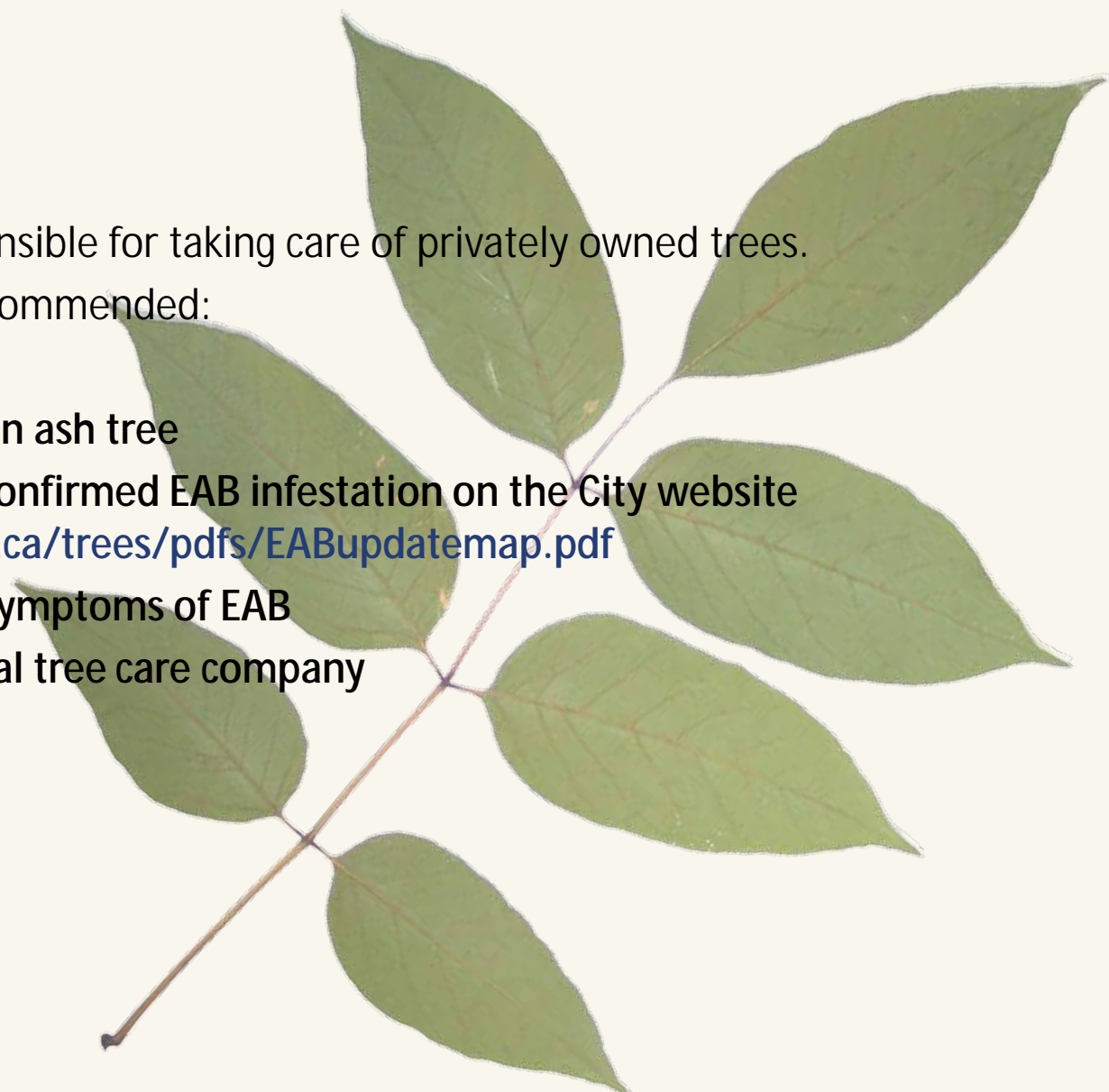
## **When dealing with trees on adjacent private property:**

- The act of removing trees on neighbouring private properties affects private property rights and is a civil issue between property owners.
- Residents cannot trespass on their neighbour's property;
- Residents cannot damage their neighbour's property (in this case a tree); and
- Residents have a right and a responsibility to maintain their property in a safe condition

# Private Ash Trees

Property owners are responsible for taking care of privately owned trees.  
The following steps are recommended:

- 1) Identify if you have an ash tree
- 2) Consult the map of confirmed EAB infestation on the City website  
<http://www.toronto.ca/trees/pdfs/EABupdatemap.pdf>
- 3) Check for signs and symptoms of EAB
- 4) Contact a professional tree care company





# Tips for Hiring a Professional Tree Care Company

Consider the following recommendations when selecting a tree care company:

- Search the Yellow Pages, Gold Book or other similar business directories or do an internet search using keywords "tree service companies Toronto".
- Consult arborists that are certified with the International Society of Arboriculture (ISA) or registered with the American Society of Consulting Arborists (ASCA).
- Urban Forestry suggests you contact 3 or more companies for an inspection, treatment recommendations and written quotes. Make sure to ask if there is fee for inspection and quotes; some companies provide these services free of charge.
- Ensure the company has liability insurance.

# Managing Private Ash Trees

## 1. Confirm EAB and stage of infestation

Is pesticide injection an option, taking into account the following:

- Cost versus benefit
- Pesticide treatment is only effective with a low level of infestation and less than 30% branch dieback.
- Treatment is a long term commitment and has to be applied every two years between June and August.
- Are there factors affecting removal cost including
  - Urgency
  - Access
  - Potential conflicts with utilities/structures
  - Complete or partial wood removal
  - Time of the year
  - Stage of decay





# By-laws Regulating Tree Removal on Private Property

Tree by-laws have been adopted to preserve significant trees on private property in the City of Toronto, to help sustain the urban forest and to educate individuals with respect to tree protection.

## **Private Tree By-law**

- applies to all trees having a diameter of 30 cm or greater

## **Ravine and Natural Feature Protection By-law**

- applies to trees of all sizes within the mapped protection area

More information on the by-laws and mapping of the Ravine and Natural Feature Protection By-law area can be found on the City website: [www.toronto.ca/trees](http://www.toronto.ca/trees)



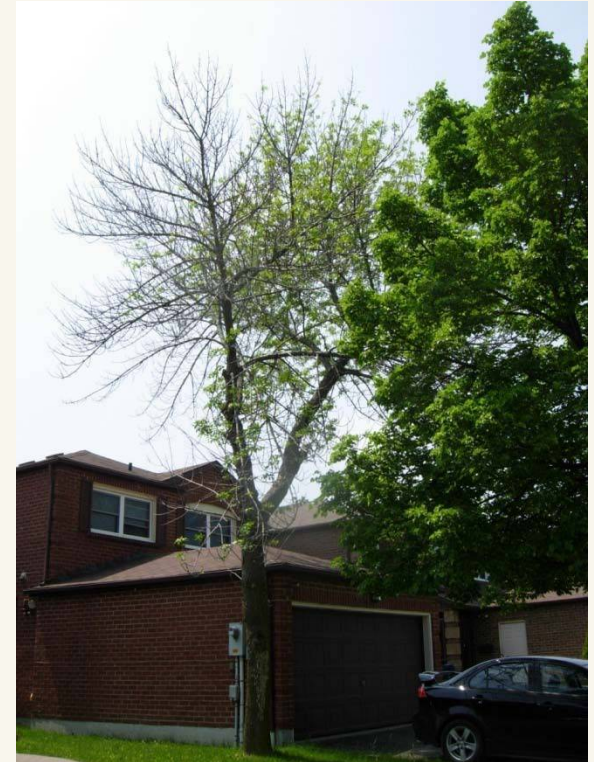
# By-law Exemptions

The Private Tree By-law has a provision that applies to EAB infestation. All requests for exemptions for privately owned ash trees that are EAB infested will be considered through an expedited process.

If your ash tree shows signs of advanced EAB infestation, you should request an exemption by calling 3-1-1.

Staff will collect information to allow tracking of where ash trees are dying throughout the City and to record the exemption, (should there be a concern that a tree is being removed without a permit).

However, if you wish to remove a healthy ash tree that shows no signs of EAB infestation, is 30 cm in diameter or larger or is within a ravine protected area, you will still require a permit under the tree by-laws.





# Hazardous Trees

Urban Forestry expects many private ash trees to decline and die. Standing hazardous trees on private property may become an issue.

Urban Forestry encourages property owners to remove dead ash trees before they decay and become hazardous. In addition to the concern for increased risk to life and property, removals of decaying trees often cost more.

Under Toronto Municipal Code 629 (11) (E), property owners are responsible for the removal of all parts of a damaged or dead tree from their property. If you are concerned about a dead or hazardous tree on another person's property, contact 3-1-1. The request will be referred to Municipal Licensing and Standards (MLS).



Photo: Sugar Bush Tree Service



# Disposal of Ash Wood

## Curb side pick-ups:

Any ash material that meets the criteria for yard waste will be collected, and includes twigs and branches less than 7.5 cm (3 inches) in diameter, in bundles less than 1 metre (3 feet) in diameter and under 1.2 metres (4 feet) in length.

## Dufferin Transfer Station:

If you are located within the Asian Longhorned Beetle (ALHB) Regulated Area larger material can be disposed of at Dufferin Transfer Station (Finch & Dufferin) including Ash wood debris that is too large for yard waste collection. The ALHB zone is approximately the area north of the 401 and west of Dufferin but some of this area is excluded, see last link below for the ALHB Regulated Area map. Check for hours of operation. **For updates on this information contact 3-1-1.**

**Please remember\*** uncertified movement of any ash wood material outside the federally regulated area is strictly prohibited and illegal. Please check with the Canadian Food Inspection Agency website below to avoid spreading EAB.



<http://www.inspection.gc.ca/english/plaveg/pestrava/agrpla/agrplae.shtml>

<http://www.inspection.gc.ca/english/plaveg/pestrava/anogla/mc/2011vaughan.jpg>

# Plant New Trees!



Replanting to maintain tree canopy cover is very Important. Private property owners are strongly encouraged to consider planting new trees before or after ash tree removal.

Healthy trees can increase property value, help cool your home and clean the air, in addition to many other environmental, economic and aesthetic Benefits.

## **Planting Resources:**

### **The City's Free Tree Program**

Applicable for City owned street allowance fronting residential Properties. Call 3-1-1 or look for the brochure

📄 **Let us plant a tree** 📄 at [www.toronto.ca/trees](http://www.toronto.ca/trees).

### **LEAF (Local Enhancement and Appreciation of Forests)**

LEAF is a non-profit that offers consultation and subsidized backyard tree planting [www.yourleaf.org](http://www.yourleaf.org)



# Summary of Available Resources

- City Website: [www.toronto.ca/trees](http://www.toronto.ca/trees) and [www.toronto.ca/trees/eab.htm](http://www.toronto.ca/trees/eab.htm)
- 3-1-1 and Urban Forestry staff
- Canadian Food Inspection Agency (CFIA)  
<http://www.inspection.gc.ca/english/plaveg/pestrava/agrpla/agrplae.shtml>
- Canadian Forest Service  
<http://canadaforests.nrcan.gc.ca/indicator/emeraldashborer>
- Non- profit groups (e.g. LEAF)  
[www.yourleaf.org](http://www.yourleaf.org)

