



## Toronto Master Gardeners

Toronto Master Gardeners are trained volunteers dedicated to providing horticultural information to the public.

For answers to horticultural questions contact the Toronto Master Gardeners' Info Line at the Toronto Botanical Garden (416) 397-1345 (Mon. to Fri. 10 a.m. to 1 p.m. and Sat., Sun. and Holidays noon to 3 p.m.) or our website, [www.questions.torontomastergardeners.ca](http://www.questions.torontomastergardeners.ca).

## Links

### Toronto Master Gardener Factsheets.

[www.factsheets.torontomastergardeners.ca](http://www.factsheets.torontomastergardeners.ca)

### Gardening Questions and Answers.

[www.questions.torontomastergardeners.ca](http://www.questions.torontomastergardeners.ca)

### About the Toronto Master Gardeners.

[www.torontomastergardeners.ca](http://www.torontomastergardeners.ca)

### Book a Toronto Master Gardener.

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### Links to other Master Gardener groups.

[www.torontobotanicalgarden.ca/links.htm#mastergardener](http://www.torontobotanicalgarden.ca/links.htm#mastergardener)

## Toronto Botanical Garden

Toronto Botanical Garden is a volunteer-based, charitable organization whose purpose is to inspire passion, respect and understanding of gardening, horticulture, the natural landscape and a healthy environment.

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## Bronze Birch Borer (*Agrilus anxius*)

### Description:

The bronze birch borer is a beetle native to North America. Injury is due to larval feeding tunnels under the bark, that girdle the trunk or branch of the tree and interrupt the flow of nutrients and sap. Older trees or those weakened by environmental stress or other insect infestations are most susceptible to attack.

The adult bronze birch borer is a slender, olive-bronze, 10 mm long beetle. The larva is flat-headed, white and 12 mm long.

### Plants Affected

It can be a serious pest of several species of birch: white or paper birch (*Betula papyrifera*), grey birch (*B. populifolia*), and European birch (*B. pendula*).

### Symptoms of Bronze Birch Borer

The first signs of damage by the bronze birch borer are sparse, yellowing foliage and browning tips on the upper branches. The dieback starts at the top of the tree and works downward. Infested branches may show swollen ridges on the bark, indicating the locations of feeding galleries (conspicuous swollen areas on the trunk are caused by the healing process of a survivor tree). D-shaped exit holes in the bark are a definite sign of the emergence of adult borers.

### Life Cycle and Habits

In early spring, the overwintering larvae migrate close to the surface of the bark, where they pupate and mature into adults. The adults

emerge through the bark (making the distinctive D-shaped holes) in late spring for up to 6 weeks and lay their eggs in crevices beneath outer layers of bark or in wounds in the bark. Newly hatched larvae then bore into the bark and begin feeding in the cambium layer. The life cycle requires one to two years, depending on time of egg laying and conditions of the host tree.

## **Organic Management/Control strategies**

The City of Toronto adopted a new municipal by-law (spring 2004) that restricts the use of pesticides. For details about the by-law visit the Pesticide by-law page on Toronto Public Health's Web site at [www.city.toronto.on.ca/pesticides](http://www.city.toronto.on.ca/pesticides) or [www.toronto.ca/health](http://www.toronto.ca/health). Questions may be e-mailed to [pesticide@toronto.ca](mailto:pesticide@toronto.ca).

Healthy trees are the best defense against bronze birch borer attack. Fertilize and water trees adequately to keep them vigorous. Prevent defoliation and injury to the foliage by controlling other pests such as aphids, scales and birch leafminers. An area of mulched soil around the base of the tree will cut down on competition from grass roots and help prevent injury to the bark from lawn mowers and weed eaters.

Try planting trees that may be less susceptible to bronze birch borer attack, such as White Spire birch (*B. platyphylla* var. *japonica*), Asian white birch (*B. maximowicziana*) or River birch (*B. nigra*).

When one or two branches are infested, heavy pruning and burning of the infested branches, along with practices to maintain the vigour of the tree, should control these insects.

Severely infected trees, i.e. that show dieback in one half of the crown, should be cut down and destroyed. All wood should be burned/removed from the property.

## **References:**

The Toronto Botanical Garden Weston Family Library is an excellent source for horticultural information.

Johnston, Warren T. and Howard H.Lyon. *Insects That Feed on Trees and Shrubs -2nd edition*. Ithaca, New York: Cornell University Press, 1988.

Factsheets are produced by the Toronto Master Gardeners in association with the Toronto Botanical Garden. They provide introductory information about a broad range of horticultural topics and are intended for personal use and study purposes. Should your gardening group or organization wish to use multiple copies we ask that you inform the Toronto Botanical Garden at [info@torontobotanicalgarden.ca](mailto:info@torontobotanicalgarden.ca).

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