



# Bronze Birch Borer

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## *Agrilus anxius* Gory

The bronze birch borer is a serious secondary pest of white, paper, and cut-leaf weeping birches. This native flatheaded borer will attack yellow, gray, and other species of birch. It has also been reported on beech.

## Description

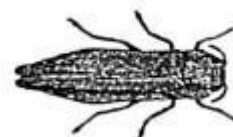


Figure 1a

Bronze birch borer adults are slender, dark, iridescent, often greenish-bronze, beetles, 7-12 mm long (Fig. 1a). A fully grown larva is slightly longer than 12 mm, very slender, and has a flattened, enlarged area behind its head (Fig. 1b)



Figure 1b

## Life History



Image 1 - Bronze Birch Borer *Agrilus anxius* Gory. Bronze birch borer: galleries under bark (peeled). Minnesota Dept. of Natural Resources; UGA4212066b



Image 2 - Bronze Birch Borer *Agrilus anxius* Gory. Bronze birch borer: galleries showing through bark. Minnesota Dept. of Natural Resources; UGA4212065b

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**This species overwinters mostly as fourth instar larvae in a boat-shaped depression just under the bark. In late April or early May larvae molt into the pupal (resting) stage. During early June adults chew their way through the bark and emerge, leaving the characteristic "D"-shaped hole. After mating, females lay eggs in cracks, beneath bark flaps, or other damaged areas. Eggs hatch in a few days into tiny**

white larvae that chew their way into the bark and start feeding. They make crooked, criss-crossing galleries (Image 1) in the inner bark. In the fall, larvae bore into the sapwood to overwinter. This species may have a one- or two-year life cycle with the latter being more common. The length of development is mainly governed by host plant condition and the time of year that eggs are laid.

## Damage

The first indication that a tree is infested with borers is wilting and dying of the upper crown. Closer examination may reveal ridges (Image 2) and bumps on limbs and branches as well as "D"-shaped adult emergence holes in the bark. In some cases the trunk may have areas with a rusty brown stain. This may be an indication that this species may be present.

Removal of the bark where ridges are abundant will reveal irregular, winding, sawdust-packed tunnels called galleries that are made by larvae excavating plant material from between bark and wood. This pest usually first attacks 3/4 inch diameter branches in the crown of the tree. Girdling of the cambium by tunneling larvae interferes with movement of plant sap and nutrients that may result in partial or complete death of a branch or tree (Image 3).



Image 3 - Bronze Birch Borer *Agrilus anxius* Gory. Bronze birch borer: birch mortality resulting from stress and invasion. Minnesota Dept. of Natural Resources; UGA4212068b

## Management

### Non-Chemical

Plant birch trees in a cool, moist, shaded environment. They do not grow well in an open, sunny, exposed area, such as the middle of a large, open yard or the exposed south or west side of a building. Further, this species prefers to lay eggs on trees growing in full sunlight.

Keep birch trees healthy by watering and fertilizing as needed. Larvae are reported not to survive in healthy trees. Birch species most susceptible to injury by this pest include *Betula papyrifera*, *B. pendula* and its cultivars, and *B. populifolia*. Monarch birch, *B. maximowicziana*, and river birch, *B. nigra*, and other brown bark species of birch are thought to be resistant or more tolerant.

Branches showing damage symptoms, or that are completely dead, should be pruned and destroyed by early May.

## Chemical

Application of registered insecticides for effective management of this pest should be timed to coincide with hatching of young larvae. To prevent newly hatched larvae from successfully chewing their way into the host plant, thoroughly spray branches and trunk with registered insecticides during the first and third weeks of June. Soil or trunk injection of registered insecticides applied according to label directions are also effective in managing this key pest of birch.

## Warning

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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