



UNIVERSITY OF GEORGIA
EXTENSION

Dogwood Borer

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Figure 1. Adult Dogwood Borer. Photos: (left) NY State Ag Experiment Station; (right) David Laughlin, horticultural student, Bugwood.org

The dogwood borer (Figure 1), *Synanthedon scitula* (Harris), can be a destructive pest of many ornamental trees in nurseries and landscapes. Adult dogwood borers are moths (Lepidoptera). The wings of these moths are clear, so they are referred to as clearwing moths.

The name “dogwood borer” was derived because they attack flowering dogwood, *Cornus florida* L., which is common in residential yards, public parks, and wooded areas. The dogwood borer also attacks fruit and nut trees in landscapes and commercial orchards. It is native to North America and is common in eastern Canada and the United States. It is present throughout Georgia.

Life Cycle

Dogwood borer moths are robust fliers that are most active at dawn. Adults of the dogwood borer are bluish-black in color, about 1.5 cm long, and appear wasp-like (Figure 1). Their wingspan is about 1.5 cm. The abdomen of adults has golden-yellow bands on the second and fourth segments, as well as on their legs. Adults, active from April to October, emerge from trees in the spring, and females look for suitable tree bark to lay eggs, particularly near wounded areas on the bark.

Female moths lay one egg at a time on the tree bark, and the eggs are pale yellow, oval-shaped, and ridged. Eggs hatch within 9 days, and the white or cream-colored larvae bore into the wound, create ***galleries*** (a network of tunnels), and feed on bark. The larvae are white with a brown head and have two reddish-brown spots on the back, near the head (Figure 2).



Figure 2. Dogwood Borer Larva. Photos: NY State Ag Experiment Station.

The larvae molt through seven instars and grow up to 1.5 cm in length by the seventh instar. Late-instar larvae prepare cocoons with silken thread and excrement, where they overwinter. Before pupation, late instars feed on the bark and then pupate inside a silken cocoon near the surface of the bark. The pupae are slightly brown and approximately 1 cm long. After 30 days, an adult moth emerges from the pupae, leaving the pupal case behind. Part of the pupal case is visible from the bark.

Typically, the dogwood borer has one generation yearly in the northeast U.S., but they are suspected to lay multiple generations a year in Georgia.

Host Plants

The dogwood borer attacks many ornamental trees, such as American beech (*Fagus grandifolia*), black willow (*Salix nigra*), blueberries (*Vaccinium* spp.), American chestnut (*Castanea dentata*), hickories and pecans (*Carya* spp.), pines (*Pinus* spp.), mountain ash (*Sorbus* spp.), hazel (*Corylus* spp.), birch (*Betula* spp.), loquat (*Eriobotrya japonica*), oaks (*Quercus* spp.), elm (*Ulmus* spp.), cherry (*Prunus* spp.), apple (*Malus domestica*), bayberry (*Morella* spp.), and myrtle (*Myrtus* spp.). There are more than 250 species listed as hosts of the dogwood borer.

Damage



Figure 3. Damage from Dogwood Borer Larval Feeding on Flowering Dogwood (*Cornus florida* L.). Photo: James Solomon, USDA Forest Service, Bugwood.org

The dogwood borer prefers to attack wounded or scarred bark near the base of a tree (Figure 3). It also uses regions where limbs branch out from the main trunk to enter inside the tree. Because larvae tunnel around the vascular bundles of trees, the affected region swells, causing gall-like symptoms. In apple trees, the burr knot region is mainly infested.

Bark that is infested with early instars appears wet during the summer, and the tunnels within the trees are typically filled with excrement and sawdust. Some other symptoms include a change in leaf color (from green to red), dieback in the crown region, and production of adventitious growth. Infested bark swells and separates from the trunk, and eventually the affected tree trunk appears devoid of bark.

Repeated infestation often destroys the bark, blocking the movement of **photosynthates** (the products of photosynthesis) and water. Severely affected trees may die over years of repeated infestation.

Management

General management practices, such as adequate fertilization and irrigation, will reduce tree stress. This is especially important during periods of dry weather. If the infestation is less severe and on a limited number of trees, a fine wire can be used to pull out the larvae from the infested area. The one host that appears resistant to dogwood borer is the Kousa dogwood.

Infestation can be reduced by preventing injury to bark when mowing or trimming around the base. To help avoid mechanical injury from landscape maintenance equipment, weeds can be reduced with proper mulching around the base of the tree trunk. Diseased and dead branches should be removed from the tree during winter. Avoid pruning in the spring, as these new

wounds can attract female moths, resulting in egg laying and infestation.

The dogwood borer can be monitored using traps with commercially available sex pheromone lures. Moths are vulnerable to predation from birds, bats, insects, etc. Although biological control agents such as birds (woodpeckers and nuthatches) prey on the larvae, they do not effectively control dogwood borers.

Application of **entomopathogenic** nematodes (nematodes that infect insects), such as *Steinernema carpocapsae*, is advised to treat infested areas of tree trunks and target developing larvae in the summer. Repeated applications with full coverage are warranted for effective control.

A barrier spray with a contact insecticide can effectively prevent infestation. This application should be administered in the spring before eggs are laid. The barrier application must have adequate coverage on the trunk and scaffold limbs. Although soil drenching with an imidacloprid is recommended for the flathead apple borer, it is ineffective on clearwing borer larvae. Remember when applying an insecticide to always follow the label as it is the law. Contact your [local Extension office](#) for the latest control recommendations.

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