



## Banded Ash Borer

Coleoptera: Cerambycidae, *Neoclytus caprea* (Say)

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**Description** Adult banded ash borers have somewhat cylindrical, elongated bodies ranging from 8–18 mm (0.3–0.7 inches) long and tapered towards the tip of the abdomen. Adults are grayish-black in color with lighter colored hairs all over the body. There is a yellow band on the leading edge of the thorax directly behind the head and several yellow bands across the wing covers. The yellow bands on the leading edge of the wing covers form a looped pattern joined along the midline while the other bands are wavy. The yellow banding pattern is also visible on the underside of the abdomen. Some individuals may have ivory colored bands rather than yellow. The legs and antennae are reddish-brown.



Adult banded ash borer, *Neoclytus caprea*, with ivory markings. (David Cappaert, Michigan State University, Bugwood.org)



Adult banded ash borer, *Neoclytus caprea*, showing yellow markings on thorax and under the abdomen. (David Cappaert, Michigan State University, Bugwood.org)

Larvae are creamy white with a dark, round head capsule and constrictions between body segments that make them look lumpy. They measure approximately 10–22 mm (0.4–0.9 inches) long when mature. Pupae resemble a yellowish mummy with the adult characteristics of legs, antennae, and head readily noticeable. Larvae and pupae are not likely to be noticed unless infested wood is being split.

Banded ash borer belongs to the cerambycid family of beetles. Adult cerambycids are often called longhorn borers in reference to their long antennae. The larvae are known as roundheaded borers.

**Life Cycle** Banded ash borer has a complete life cycle of egg, larval, pupal, and adult stages. Adults emerge from infested wood in early spring. Females lay eggs in cracks and crevices of bark on dying or recently dead host trees. Newly hatched larvae feed under the bark before tunneling into the wood, where they continue to feed until pupating. Larval tunnels are packed with sawdust-like frass (fecal

matter). Banded ash borer may overwinter as either mature larvae or as pupae within the wood. Generally there is a single generation each year. Developmental times are probably drawn out in hardwood cut and seasoned for lumber or firewood as the moisture in the wood continues to decrease.



Banded ash borer, *Neoclytus caprea*, galleries with frass. (Lacy L. Hyche, Auburn University, Bugwood.org)

**Damage** Banded ash borer favors ash, oaks, and hickories, but will attack almost all stressed, dying, or recently dead hardwood trees and even some newly planted trees. Newly-cut, green logs with the bark still attached are very attractive to egg-laying females. Debarked logs are not attractive to egg-laying females. Larval tunneling in standing trees may weaken limbs, making them more susceptible to breaking in high winds. Economic damage by banded ash borer larvae is largely limited to hardwood intended for lumber or firewood. Adults may be found in homes after emerging from firewood brought inside during the winter, where they can be a nuisance but do not cause structural damage to finished lumber or wood furniture. Firewood can be re-infested by newly-emerged adults over successive generations of banded ash borer until the wood is now longer attractive to egg-

laying females. Consider leaving firewood outside the home unless it is to be burned immediately. Treating wood piles to control banded ash borer is not generally recommended due to the volume of insecticide necessary to treat all the surfaces of cut wood. Leaving the wood outside until needed and burning it in a timely fashion is a better choice.

Infestation by banded borer can be confused with the emerald ash borer (*Agrilus planipennis*). Banded ash borer tunnels tend to meander and extend deep into the tree. This is in contrast to the emerald ash borer, whose tunnels are tightly S-shaped and restricted to the phloem directly under the bark of the tree. The exit holes of banded ash borer are round while those of the emerald ash borer are distinctly D-shaped.

**Habitat/Distribution** Banded ash borer is a native species found wherever its wide host range occurs over much of the continental United States and into eastern Canada.

**Control** Trees properly planted in a good site and maintained in good health are less susceptible to banded ash borer and similar pests. See the Virginia Pest Management Guide 018, Home Grounds and Animals, for chemical controls currently recommended for banded ash borer attacking standing trees. Thoroughly spray the bark of the trunk and larger branches with the selected material in late July and early September. This spray schedule will kill females laying eggs in cracks and crevices of the bark as well as newly hatched larvae chewing into the tree through the treated bark.

The systemic insecticides dinotefuran and imidacloprid can be applied as a preventative treatment against roundheaded borers before infestation occurs. Applied as soil drenches, these materials move up into the tree through the tree's vascular system. They must be applied when the trees are actively

growing and transpiring, and application must be early enough that sufficient quantities are translocated into the tree well ahead of when adults begin laying eggs on the tree. These insecticides may kill both the females chewing on the bark to form notches where they will lay their eggs as well as newly hatched larvae boring into the sapwood. Neither dinotefuran nor imidacloprid will have little effect on any roundheaded borer larvae already present in the tree's heartwood.

Prune out infested limbs when borers are not active and dispose them properly so that adults do not emerge and re-infest nearby trees. Newly cut logs should be debarked and stored properly to avoid infestation. Treating wood piles with insecticide to control banded ash borer is not recommended.



Redheaded ash borer, *Neoclytus acuminatus*, and emergence holes. (Howard Ensign Evans, Colorado State University, bugwood.org)

**Note** Redheaded ash borer, *Neoclytus acuminatus* (F.), is a related species that looks similar to banded ash borer. It occurs over much of the United States and into eastern Canada. Redheaded ash borer is a reddish brown with four yellow dorsal bands on the wing covers. It lacks the “looping” yellow bands seen on banded ash borer. Overall, the shape, size, and coloration of the adult redheaded ash borer mimic that of a wasp. Like banded ash borer, redheaded ash borer attacks stressed, dying, or recently dead ash trees and other hardwoods. See the Virginia Pest Management Guide 018, Home Grounds and Animals, for the chemical controls currently recommended for roundheaded tree borer larvae, which includes the larval stage of redheaded ash borer. Treatments for redheaded

ash borer should be applied to trunks and main branches in early May, early June, and early July.

Banded ash borer should not be confused with the similarly named banded ash clearwing moth, *Podosesia aureocincta*, Purrington & Nielsen, which is also a pest attacking ash trees.